NICASALUD
BASELINE SURVEY RESULTS FOR 8 PARTNER ORGANIZATIONS

ADRA, CARE, CRS, PARTNERS, PCI, PLAN, HOPE and SAVE

November—December 1999

TABLE OF CONTENTS

ACRONYMS

ADRA	-	Adventist Development and Relief Agency
BF	-	Breastfeeding
BHR/PVC	-	Bureau of Humanitarian Relief/Private Voluntary Cooperation
CARE	-	Cooperative for American Relief Everywhere
CRS	-	Catholic Relief Services
DCM	-	Diarrhea Care Management
DPT	-	Diphtheria, Pertussis, and Tetanus
EPI	-	Expanded Program on Immunization
G/PHN	-	Global Bureau/Population, Health, and Nutrition
HIV/AIDS	-	Human Immunodeficiency Virus/Acquired Immune Deficiency
HOPE	-	Project HOPE
IMCI	-	Integrated Management of Childhood Illness
IR	-	Intermediate Results
LQAS	-	Lot Quality Assurance Sampling
MINSA	-	Ministry of Health
MMR	-	Measles, Mumps, Rubella
MNC	-	Maternal and Newborn Care
NGO	-	Non-Governmental Organization
PCI	-	Project Concern International
PCM	-	Pneumonia Case Management
PLAN	-	Plan International
PARTNERS	-	Partners of the Americas
PVO	-	Private Voluntary Organization
SA	-	Supervision Area
SAVE	-	Save the Children/US
SpO	-	Special Objective Syndrome
TA	-	Technical Assistance
US	-	United States
USAID	-	United States Agency for International Development
WHO	-	World Health Organization

ACKNOWLEDGMENTS

BACKGROUND

This document reports the results of a baseline survey of NICASALUD-supported areas conducted simultaneously by its eight private voluntary organization (PVO) members: Adventist Development and Relief Agency (ADRA), Catholic Relief Services (CRS), Cooperative for American Relief Everywhere (CARE), PLAN International, Partners of the Americas (Partners), Project Concern International (PCI), Project HOPE, and Save the Children/US (SAVE). These organizations were recipients of the first sub-grants of the USAID-funded NICASALUD network that was initiated in Nicaragua in September 1999. The eight PVO sub-grant recipients received their grant awards in November of 1999 and conducted their baseline surveys during late November 1999 through early January 2000 as the first stage of establishing a monitoring and evaluation system for their respective projects. Baseline survey activities included training, data collection and analysis.

Establishment of NICASALUD
In March, 1999, USAID/Nicaragua approached the Washington, D.C.-based *NGO Networks* for Health project, funded by the Office of Population of the Center for Population, Health and Nutrition of the Global Bureau of USAID (G/PHN), to implement activities in Mitch-affected areas of Nicaragua through sub-grants to both international PVOs and local NGOs. *Networks* is a project that aims to create a global health partnerships to meet the increase in demand for quality family planning, reproductive health, child survival, and HIV/AIDS information and services. *Networks* facilitated the formation of NICASALUD by the eight partner PVOs to support their coordinated response to the aftermath of Hurricane Mitch.

The *Networks* initiative in Nicaragua facilitates NICASALUD in the following activities:

Grants disbursement and management to aid Mitch-affected areas: these activities include setting criteria, reviewing proposals, selecting proposals, grants disbursement, monitoring, reporting, and related TA. Sub-grants finance child health, infectious disease, and reproductive health activities, as well as related operational costs; and rehabilitation, reconstruction, and re-equipping of health facilities.

Enhancing collaboration among grant recipients and other health service providers in Mitch-affected areas to improve service delivery: these activities include information sharing, reducing duplication of services, building collaborative activities and public-private partnerships, and promoting complementary services to communities.

Promoting sustainable healthy behaviors in Mitch-affected communities: these activities include reviewing appropriate behavior change strategies and interventions, including behavior change as a key component of the sub-grants (where appropriate), community mobilization, and community assessments.

USAID/Nicaragua's post-hurricane reconstruction plan is captured in its Special Objective (SpO) *Rapid Reconstruction and Sustainable Recovery in Mitch-Affected Areas*. The specific intermediate result (IR) in public health proposed for the SpO is "Health status of Mitch-affected families maintained or improved." NICASALUD, as requested by USAID/Nicaragua, proposed activities to work under IR1.1: *Increased access to health services in Mitch-affected areas*. NICASALUD plans to restore primary health care services
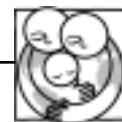
(immunizations, child survival, and reproductive health) in small communities and rural areas affected by Mitch. In addition, the USAID Mission requested that emphasis be placed on "health education, monitoring, prevention and treatment of malaria, dengue, cholera, leptospirorosis and other infectious diseases." Related activities are carried out through increased training and technical assistance to both private and public sectors, as well as, rehabilitation of health facilities.

Catchment Areas for the Eight Partners
NICASALUD's eight PVO partners work in Mitch-affected areas located in the north and northwestern departments and along the Rio Coco in the Atlantic Region. The departments and municipalities (the political administrative level below the department) in Nicaragua in which they work are reported in Table 1. Their geographical distribution is represented in the map that follows. Organizations that are listed together on the map work in the same municipality.

Table 1: Mitch-Affected Departments and Municipalities in which the Eight PVO Partners of NICASALUD Work		
PVO	Departments	Municipalities
ADRA	Madríz	Totogalpa, Yalagüina, San Lucas, Palacagüina
CARE	Estelí	Pueblo Nuevo, La Trinidad, Condega, Limay, San Nicolás, Estelí
CRS	Jinotega	Wiwilí
HOPE	Jinotega	Wiwilí, Pantasma, Jinotega
PARTNERS	Jinotega	Jinotega
PCI	Jinotega	Yalí, La Concórdia, San Rafael del Norte, Pantasma
PLAN	Chinandega	Puerto Morazán
SAVE	León Chinandega	Malpaisillo, Quezalguaque, Telica, Posoltega, Chinandega, Chichigalpa

Map of Nicaragua with NICASALUD Members

Selected Interventions

The eight PVO members of NICASALUD developed proposals independently of each other. Table 2 lists the organizations by intervention. IMCI is listed along with *Pneumonia Case Management, Diarrhea Case Management* and *Treatment of Malaria.* In addition to participating in the IMCI initiative in Nicaragua, through the Ministry of Health (MINSA), the same PVOs also wanted to focus on specific aspects of these interventions.

Table 2: Eight PVO Members of NicaSalud by the Intervention Areas They Proposed During the Start-Up Workshop of September 27-October 1, 1999								
Intervention Areas	ADRA	CARE	Catholic Relief Services	Project HOPE	Partners of the Americas	Project Concern International	Plan International	SAVE
Maternal & Newborn Care	*	*		*	*	*	*	*
Pneumonia Case Management		*	*	*	*		*	*
Diarrhea Case Management		*	*	*	*		*	*
Integrated Management of Childhood Illnesses	*	*	*	*	*		*	
Expanded Program on Immunization			*		*			*
Nutrition	*	*	*	*			*	*
Breastfeeding	*	*					*	*
Vector Control & Related Care Seeking: Malaria				*		*	*	*
HIV/AIDS/STI		*			*		*	*
Water and Sanitation for Health	*					*		*

METHODS

Training Workshops in Survey Methodology
NICASALUD organized the training of approximately 31 PVO managers and 55 supervisory health promoters in a series of six workshops about data collection methods and *paper and pencil* tabulation methods. The workshops were facilitated by the Senior Monitoring and Evaluation Advisor of NGO Networks along with a PLAN consultant and the Networks Monitoring and Evaluation Analyst – hereafter referred to as the Networks M&E Team. Everyone who participated in the training and subsequently carried out the baseline surveys were health workers employed by the eight PVO sub-grant recipients and worked directly in the project's interventions. No outside data collectors were employed for the baseline survey. The Networks M&E team continued to provide technical assistance during an initial two days of data collection, and thereafter the PVOs managed the process without further facilitation. Data collection teams of health promoters were supervised by their own PVO managers. A local NGO, ALISTAR, provided additional support during the initial training workshops as its staff had been trained earlier by the Senior M&E Advisor in using the same sampling methodology.

Agenda for Survey Training Workshops
The dates for the six workshops and a list of participating organizations is included in Table 3 below.

Table 3: Six Training Workshops by Type, Date and Participant		
Type Workshop	Dates	Participating Organizations
Managers Workshop for Data Collection	29 November— 1 December 1999	Managers from all eight PVOs.
Health Promoters Workshop for Data Collection	2 – 4 December 1999	Health promoters from Project HOPE, PCI, Partners, and CRS.
Health Promoters Workshop for Data Collection	9 – 11 December 1999	Health promoters from CARE, PLAN, SAVE, and ADRA
Tabulation and Analysis Workshop	15 December 1999	CRS, HOPE, PCI, Partners
Tabulation and Analysis Workshop	11 – 12 January 2000	PLAN, SAVE, PCI, CRS
Tabulation and Analysis Workshop	13 – 14 January 2000	ADRA, CARE, HOPE, Partners

The 31 managers from the eight PVO partners of NICASALUD were trained first so that they were later able to participate in training health promoters as well as to supervise data collection in the field. A good understanding of the methodology, especially LQAS principles, community mapping, selecting communities and households, and interviewing was essential for effective field supervision and to maintain the quality of the data collection.

Lot Quality Assurance Sampling
The M&E system for NICASALUD uses Lot Quality Assurance Sampling (LQAS) for data collection in baseline surveys (Wolfe and Black 1989; Valadez 1991; Robertson, Anker et al. 1997). The intention is that this method also be used for recurrent monitoring by NICASALUD's members.

There are three major advantages of LQAS over EPI cluster sampling, the other sampling method often used by PVOs/NGOs. First, in addition to permitting calculation of a conventional average coverage for a program area, program managers can also determine the relative performance of the different supervision areas that comprise the entire catchment area. For example, a typical PVO program area could include several hundred communities with a total population of several thousand people. To manage program implementation, the program area is divided into units or supervision areas (SAs). Each unit is managed by a supervisor such as a nurse, a midwife, an experienced health promoter, or some other individual. With LQAS, each supervisor can determine their relative performance in reaching an annual performance benchmark. During baseline surveys one assumes that the conditions are homogeneous. During baselines LQAS is used to determine whether any SA is below average and should be treated as an outlier needing particular assistance.

Second, LQAS allows a smaller sample size than cluster sampling for making judgements. For most applications, a sample of 19 individuals is required for each supervision area in order to judge whether it has reached a performance benchmark. However, to calculate a coverage proportion the individual samples of 19 are added together and an average is calculated. Assuming there are about five SAs the total sample would be 95. Cluster

sampling, in conventional applications of PVOs requires a sample size of 300. In addition to carrying out fewer interviews, the smaller sample size leads to a quicker analysis.

Third, as LQAS needs only a small sample to judge whether a health worker's performance reaches a predetermined standard, data collection does not seriously compete for time they have allocated to other health care provision activities. Health workers in developing countries are often over worked and need management tools that can easily be understood within their own cultural context. (For further details on the LQAS methodology and its use see Annex 3.)

Parallel Sampling
The interventions selected by the PVOs and as presented in Table 2 suggest that at least four different categories of respondents (or universes) ought to be sampled in order to obtain meaningful baseline data. Table 4 includes the interventions and the sampling universes for the baseline. Four distinct universes are represented including: mothers of children 0-11 months, mothers of children 12-23 months, non-pregnant women 15-49 years, and men 15-49 years. A separate short questionnaire was developed for each universe. We refer to four questionnaires taken together as a *set*. Interviewing a sample of these universes for assessing the various indicators is presented in a separate section on indicators. However, in this section we point out the implications on the sampling design arising from having the four sampling universes.

Each of the 19 randomly selected houses was the starting point used to sample one individual in each of the four universes. In other words, one set of questionnaires was completed for each sampling point. If a woman, man, or a mother resided in the first house, s/he was selected for interview. If not, then the interviewer went on to the next house to find the remaining interviewees. In theory all of the universes could be sampled in a single house with one exception. Mothers of children 0-11 months and mothers of children 12-23 months had to live in separate residences. The reason is that several indicators deal with treatment of the sick child. Questions related to these indicators were included in the two maternal questionnaires. Sub-samples of children 0-11 months and 12-23 months who were sick in the last two weeks were aggregated into a single group for analysis, namely, mothers of sick children 0-23 months. In order to avoid the possibility of a mother having both a sick child 0-11 and 12-23 months represented in the sample, the rule was that these children had to reside in different households. We avoided this possibility as we presumed the responses to knowledge and behavior questions would be the same for both age groupings of children.

Table 4: Sampling Universes for Each of the Intervention Categories Included in the Baseline Survey				
Intervention Category	Sampling Universe			
	Children 0-11 Months	Children 12-23 Months	Women 15-49 Years	Men 15-49 Years
Demographic			X	X
Family Planning				
Family Planning: Behavior & Knowledge			X	X
LAM	X*			
Reproductive Health				
Maternal and Newborn Care: Behavior	X			
Maternal and Newborn Care: Knowledge			X	X
Birth Spacing	X		X	
Child Survival Interventions				
DCM: Knowledge	X	X		
PCM: Knowledge	X	X		
Malaria Prevention: Knowledge	X	X		
DCM: Behavior	X**	X**		
PCM: Behavior	X**	X**		
Malaria Treatment: Behavior	X**	X**		
Exclusive Breastfeeding	X*			
Complementary Breastfeeding	X***			
Continuing Breastfeeding		X		
Nutrition: Vitamin A		X		
EPI: Child Vaccinations, and TT	X	X		
HIV/AIDS/STI: Knowledge and Behavior			X	X
Water and Sanitation: Behavior			X	
*Mothers with Children 0-5 Months **Mothers with Sick Children in the Last Two Weeks with Corresponding Symptoms Disease Category ***Mothers of Children 6-9 Months				

In our experience, this form of sampling, which we call *parallel sampling*, was quite efficient. Supervisors found that it was not difficult to find one interviewee for each type of questionnaire using one random starting point. We recommend this approach without hesitation in future applications. In the best case scenario, a supervisor found interviewees in no more than two households. In the worst case scenario, a supervisor interviewed individuals in four households.

Using LQAS for Baseline Surveys

LQAS heretofore has been used to determine whether supervision areas within an existing project reach an annual predetermined performance benchmark. For example, let us assume that at the end of year 1 of a project, a PVO expects that 40 percent of mothers in each SA will know how to prepare ORS correctly. LQAS can be used effectively to assess whether each SA reaches the 40 percent benchmark. (See Annex 3: *Interpreting LQAS Data* for a further discussion). But LQAS can also be used when the project is just beginning and – by definition – there is no benchmark.

The *Networks* M&E team devised an application of LQAS that addressed this challenge. First, let us establish that the Networks team proposed using LQAS for the baseline survey both to obtain high quality data for planning the program, and to train supervisors and PVO managers in an approach that could be used for regular M&E throughout the life of the project. Using a different sampling design could have introduced problems of comparability

of the baseline and monitoring data that was best to avoid and would have led to additional training.

The solution developed by the *Networks* M&E team was as follows. At the baseline, we assume that Supervision Areas are homogeneous. LQAS principles can be used to determine whether any SA deviated from an average condition of a PVO catchment area and was substantially below average. This situation signals that the SA needed special attention at the outset.

Therefore, to make an LQAS decision, the data from all SAs were added together and an average calculated which is the coverage proportion for a PVO catchment area. This result was used to identify the corresponding column in Table 5, which displays the LQAS Table for field supervisors. In surveys where a threshold or benchmark has been established, an LQAS judgement is made using the following steps.

1. For each indicator, count the number of *correct* responses to the corresponding question.
2. Go to the Composite LQAS Table and locate the row for a sample of 19 (or the appropriate sample size if it is different than 19).
3. Find the program target or, in the case of baseline survey, the average coverage along the column header and put your finger there.
4. Bring your finger down to the cell with a value in it. That is the *Decision Rule*.
5. If the total number of correct responses is less than the decision rule, then the area did not reach the target.

Any SA that failed to reach the decision rule value was judged to be *below average* and in need of special attention.

Table 5: LQAS Decision Rules for Sample Sizes of 12-30 with Average Coverage and Annual Coverage Targets Ranging from 5% - 95%

Sample Size	Average Coverage (Baselines) / Annual Coverage Target (Monitoring and Evaluation)																		
	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%
12	0	0	0	1	1	2	2	3	4	5	5	6	7	7	8	8	9	10	11
13	0	0	0	1	1	2	3	3	4	5	6	6	7	8	8	9	10	11	11
14	0	0	0	1	1	2	3	4	4	5	6	7	8	8	9	10	11	11	12
15	0	0	0	1	2	2	3	4	5	6	6	7	8	9	10	10	11	12	13
16	0	0	0	1	2	2	3	4	5	6	7	8	9	9	10	11	12	13	14
17	0	0	0	1	2	2	3	4	5	6	7	8	9	10	11	12	13	14	15
18	0	0	0	1	2	2	3	5	6	7	8	9	10	11	11	12	13	14	16
19	0	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
20	0	0	0	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17
21	0	0	0	1	2	3	4	5	6	8	9	10	11	12	13	14	16	17	18
22	0	0	0	1	2	3	4	5	7	8	9	10	13	13	14	16	16	18	19
23	0	0	0	1	2	3	4	6	7	8	10	11	12	13	14	16	17	18	20
24	0	0	0	1	2	3	4	6	7	9	10	11	13	14	15	16	18	19	21
25	0	0	1	2	2	4	5	6	8	9	10	12	13	14	16	17	18	20	21
26	0	0	1	2	3	4	5	6	8	9	11	12	14	15	16	18	19	21	22
27	0	0	1	2	3	4	5	7	8	10	11	13	14	15	17	18	20	21	23
28	0	0	1	2	3	4	5	7	8	10	12	13	15	16	18	19	21	22	24
29	0	0	1	2	3	4	5	7	9	10	12	13	15	17	18	20	21	23	25
30	0	0	1	2	3	4	5	7	9	11	12	14	16	17	19	20	22	24	26

Questionnaire Development

NICASALUD used four short questionnaires for the baseline survey. Each one corresponded to a particular sampling universe:

The four separate questionnaires correspond to the following universes:

Mothers with children 0-11 months
Mothers with children 12-23 months
Women of reproductive age 15-49 years, not pregnant
Men of reproductive age 15-49 years

All core and priority indicators from the NGO Networks for Health M&E Plan corresponding to the selected interventions were included in the questionnaire (Valadez 2000). Corresponding questions were derived from the KPC-2000 Instrument (CSTS and CORE 1999). Additional questions were added that the eight NICASALUD PVOs identified as essential for planning their programs. These questions did not correspond to indicators in the *Networks* M&E Plan but are anticipated in the information Flow Chart explained in the Plan (Valadez 2000: 11). All interventions in Table 2, presented earlier, have corresponding questions in the baseline surveys.

Questionnaires, based on the KPC-2000 questionnaire, were translated into Spanish by a native speaker (bilingual in English). The questionnaire was first shared with the eight PVOs to solicit their comments and recommend changes. A revised version was then pre-tested in a low-income area of Managua that was not in the project area. Revisions were made, and the revised questionnaire shared at a LQAS Training Workshop for PVO managers. Questions

were reviewed and revised on a question-by-question basis until a consensus was reached. This version was then pre-tested by the managers in another low-income area of Managua that was not in the project area. Additional revisions were made again and presented to the PVO supervisors who were to collect the baseline data. The process of review, revision, pre-test, and revision continued again until PVO supervisors and their managers were satisfied with the questionnaire.[1]

This process, in addition to refining the survey instrument, was essential to obtain the *buy-in* from the NICASALUD members that the questionnaire was truly theirs with culturally appropriate language and that they would value the information it provided.

Having completed this process, the *Networks* M&E Team is of the opinion, that reviewing a questionnaire using a consensus process in an NGO network is not viable. Too many actors are involved in the deliberation for a suitable questionnaire to result in a reasonably short, efficient period of time. The Team recommends that future questionnaire reviews by focus country networks be carried out by a commission formed of a representative group of PVO/NGO managers, supervisors and the *Networks* M&E Team. For this process to work, the local network members need to agree to this approach prior to the training workshops.

Tabulation Workshops
The PVOs together collected data from a total of 28 supervision areas. On average, each PVO needed approximately 4-5 days to collect the 19 sets of data in each of their SAs. The day following the data collection, a Tabulation Workshop was held in which the supervisors and their managers were trained to hand tabulate results using Tabulation Sheets. Managers and supervisors tabulated data by hand for the most important variables in order to have information on key variables almost immediately after the survey was completed and to set priorities among supervision areas. LQAS was used by SA supervisors and PVO managers to make decisions about each SA vis-a-vis others within the catchment area of the same PVO as well as to calculate overall coverage of the catchment area.

The Tabulation Workshop lasted for two days and also began the process for PVOs to apply the results to improve their program designs. Therefore, within 48 hours of data collection, data were used for programmatic decision making.

There were two types of tabulation sheets. The first was used to enter data for each of the 19 observations in one SA for each set of indicators. The second was used to summarize the data from each SA and to calculate an average coverage. The average was then used to identify the LQAS decision rule and to identify below average SAs on the second Tabulation Sheet.

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[1] Copies of any of the questionnaires used in the baseline survey can be obtained from Dr. Fernando Campos (fcampos@care.org), M&E Advisor at NICASALUD, Managua, Nicaragua or from Dr. Joseph Valadez, Sr. Monitoring and Evaluation Advisor (jvaladez@ngonetworks.org) at NGO Networks for Health in Washington, D.C.
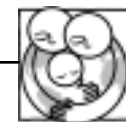
Developing a Computer Database

After the Tabulation Workshop, the questionnaires were entered into a computerized database in Managua by NICASALUD. Each questionnaire was double entered to increase the likelihood of identifying data entry errors, and the two data sets were verified. Data were then cleaned using range checks. The cycle of data management as reported in the *Networks* M&E Plan in Figure 4 depicts the process used by NICASALUD (Valadez 2000: 20). Data were entered using EPI INFO, Version 6.[2] The computerized data were used for analyses presented here.

RESULTS

All of the results in this section concern responses to questions asked of four different categories (or universes) of respondents: non-pregnant women 15-49 years who are in union, men 15-49, mothers of children 0-11 months of age, and mothers of children 12-23 months. For purposes of brevity we refer to these four universes as: women, men, mothers of children 0-11 months, and mothers of children 12-23 months.

Data were weighted by SA population sizes using the *direct adjustment method*. While weighting is not needed when making LQAS judgements of an SA, it is used when aggregating the data to calculate coverage for reporting purposes for all of NICASALUD, a geographical area, or a PVO catchment area. Eight PVO partners work in the NICASALUD Project area, each having between two and six supervision areas for a total of 28 SAs. A sample of 19 sets of interviews was carried out in each SA regardless of the SA population size and the number of SAs of the PVO. Without weighting, a sample of 19 can either overestimate or underestimate the coverage estimate for a given PVO depending on the number of SAs. Weighting the data allowed us to remove this distortion.

The results presented are for NICASALUD as a whole, since individual reports have already been written by each PVO summarizing results pertinent to their own organization. This report displays the conditions of health services in the NICASALUD catchment area. On occasions in which there is important regional or PVO variation, we report it. Otherwise, we maintain this analysis at a macro level.

All project indicators reported in this analysis are included in Annex 1 and detailed tables are included in Annex 2.

Demographic Characteristics of Respondents

This section reports basic demographic information about men's and women's civil (marital) status, age, literacy, and education. In addition, women were asked if they work outside the house.

About one third of men were represented in each civil status category: married (34%), single (36%), and living in a free union (30%), and others (<1%). The civil status of women was as follows: married (28%), single (27%), living in a free union (42%), and others (3%). It is interesting that a greater proportion of women saw themselves as living in a free union

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[2] EPI INFO's home page is at: http://www.cdc.gov/epo/epi/epiinfo.htm. The EPI INFO computer program can be downloaded from the internet worldwide web.

compared to men (42% vs. 30%, respectively) whereas a greater proportion of men saw themselves as single (36% vs. 27%, respectively) or married (34% vs. 28%).

Men and women exhibited similar educational attainment. About one fifth of each gender reported they had no education (men 23%, women 21%). Most of the remainder had not completed primary school (men 43%, women 43%). About 19 percent of both men and women had completed at least primary school, and 15 percent of men and 16 percent of women had either attended, completed, or exceeded secondary school. Although the DHS (INEC, Salud et al. 1999) also found that educational attainment for men and women was similar, it detected a higher level of educational attainment. This result may be due to the DHS having sampled the general population which is less deprived than the areas served by NICASALUD PVO sub-grantees. DHS had found that 26 percent of men and 28 percent of women had completed at least secondary school.

Literacy was similar for men and women; 53 percent of men and 57 percent of women for NICASALUD areas were able to read the health education message presented during the interview. Literacy was slightly lower in Jinotega (44% men and 50% women), and in particular in the CRS catchment area (26% for both sexes).

Women were asked if they worked outside the home and the kind of work they did. Most (80%) did not work outside the home, seven percent did farm work, five percent salaried work, and three percent were street vendors.

Family Planning
Mitch funds are not used to support any *family planning* activities of the members of NICASALUD. As a result family planning indicators are not measured for the purpose of program planning. However, in order to provide information on the reproductive health choices of women and men in the catchment area, family planning questions were asked. Fertility behavior and family planning questions were asked of men and women 15-49 years, and of mothers with children 0-11 months. These results are reported in this section.

Child Spacing
In NICASALUD, 42 percent of recent mothers had spaced their last two births at least 24 months apart. Twenty-one percent had spaced their children at least 36 months apart. These results differ from the DHS, which reported that half of all births for the general population were spaced more than 30 months apart. Birth spacing did not vary greatly by region, but large variations occurred in the different PVO catchment area. For example births were spaced more closely together in the catchment areas of CARE and CRS where only 20 and 25 percent, respectively, of the last births were spaced at least 24 months from the preceding one.

Although knowledge is not necessarily associated with behavior, this section assesses whether women know that a birth interval of two or three years increases survivorship of both the mother and child. About 89 percent of women reported that a birth interval of at least 24 months was desirable compared to 51 percent who reported that an interval of at least 36 months was more desirable. This result indicates ample opportunity for the projects to increase knowledge in the population about this reproductive health fact.
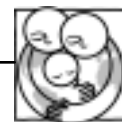
**Fig. 1 Women's Birth Spacing Behavior and Knowledge in
NICASALUD: November 1999 - January 2000**

Legend:
- ■ Most Recent Births Spaced by at least 24 Months of Mothers with Children 0-11 mos
- □ Most Recent Births Spaced by at least 36 Months of Mothers with Children 0-11 mos
- ■ Women (15-49yrs, Not Pregnant) who Report Birth Interval Should be at Least 24 Months
- □ Women (15-49yrs, Not Pregnant) who Report Birth Interval Should Be at Least 36 Months
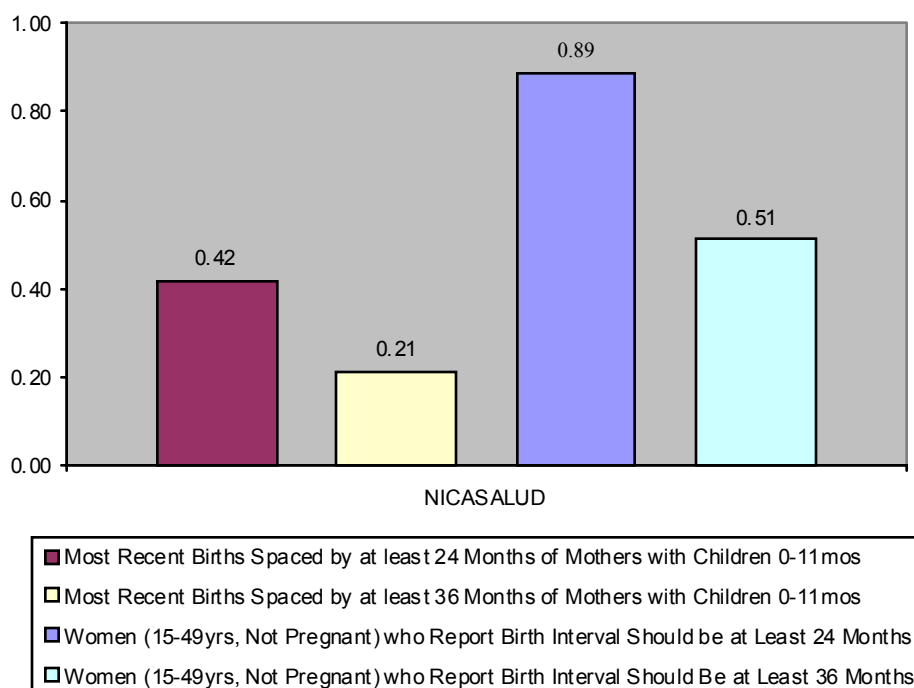
Family Planning Preferences

Eighty percent of the women surveyed said that they did not want more children. This proportion was higher for the Chinandega/León Region (87%) as well as for the SAVE and PARTNERS catchment areas, both reporting that over 80 percent of women did not want more children. SAVE is located in Chinandega/León whereas PARTNERS is in Jinotega. More than half of mothers with children 0-11 months (57%) reported that their most recent pregnancy was not intended, with a greater proportion of unintended births in Jinotega (62%), the remote CRS catchment area (67%), and the ADRA catchment area (68%). These results suggest that there may be a high unmet need for family planning methods throughout NICASALUD.

The above conclusion may be particularly relevant to adolescents as most (88%) of women less than 24 years of age, who had had children, had their first birth before age 20. These data did not vary considerably by region, and because of the size of the sub-sample there are too few observations to assess variation by PVO catchment area. This result, however, deviates somewhat from the DHS which showed that in the general population about 78 percent of women aged 20-25 years, who already had children, reported a birth before age 20 (INEC, Salud et al. 1999:46). This proportion had not changed for two decades. However, it is important to note a difference of the NICASALUD survey with that of DHS, namely, the former population is in very low-income areas whereas the latter includes varied income levels.

**Fig. 2 Women's Family Planning Behavior and Knowledge in
NICASALUD:
November 1999 - January 2000**

☐	Women (less than 24yrs, with at least One Child) who had First Birth Before Age 20
☐	Women (15-49yrs, Not Pregnant) who Do Not Want More Children
☐	Women (15-49yrs, Not Pregnant) Currently Using a Contraceptive Method [CPR]
☐	Most Recent Pregnancy was Unintended of Mothers with Children 0-11mos
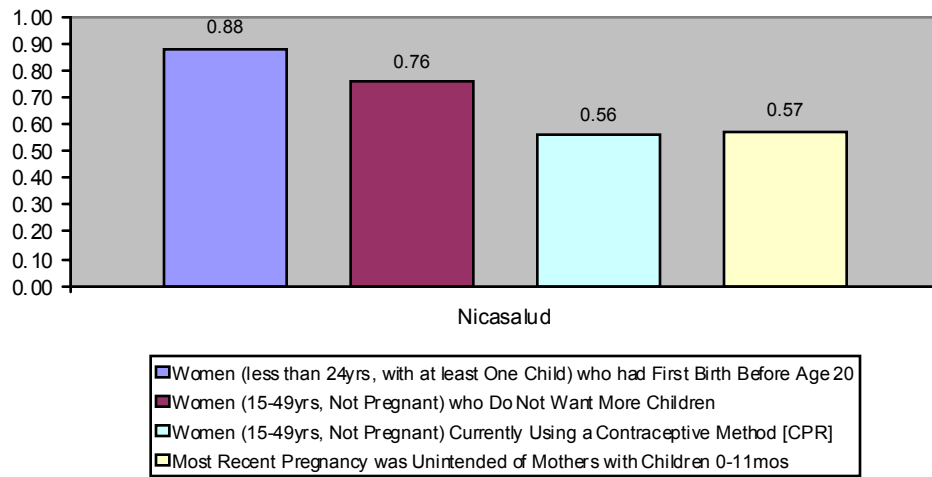
Family Planning Method Use

Contraceptive Prevalence Rate (CPR) was calculated using responses of the non-pregnant women 15-49 years of age. However, women, men, and mothers with children 0-11 months were also asked if they, or their partner, were using a family planning method at the time of the survey to prevent pregnancy. Fifty-six percent of women as compared to 42 percent of the men reported that they used a family planning method. As men were sampled independently of women, we assume that in most cases they are not partners. Our calculations did not take into account men whose partners were pregnant at the time of the survey. Given the discrepancy in the proportion of men and women using contraception, a portion of women may have been using contraception without their partner's knowledge. CPR did not vary by region. By PVO catchment area, for women only, the CRS area had an appreciably lower CPR (33%). For men, there was little variation by region or by PVO catchment area.

Women's preferred methods were tubal ligation (18%), pills (17%), and injectables (13%). The DHS results differ. Although DHS also reports sterilization (19%) as the most commonly used method by women, fewer of them used pills (9%). Also, the third most commonly used method reported by DHS was the IUD (6%) which only 3 percent of women in NICASALUD used. Further, in the DHS only 3 percent of women reported using injectables versus 12 percent in NICASALUD. This latter result may be due to greater current access to injectables during the time of the NICASALUD baseline.

Although men also reported the same methods as most commonly used, women's proportions are higher than those reported by men: sterilization (18% women vs. 10% men), pills (17% women vs. 14% men), injectables (13% women vs. 10% men). With respect to condom use, more men (5%) reported using them than did women (2%). Only 2 percent of women reported using LAM. Among mothers of children 0-5 months, 8 percent were correctly and consciously using LAM.

This report will not include a section assessing use of *modern* contraceptive methods, because only one woman and one man used a non-modern method, namely, abstinence.
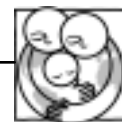
**Fig. 3 Women and Men Currently Using a Contraceptive Method,
Stratified by Method in NICASALUD: November 1999 - January 2000**
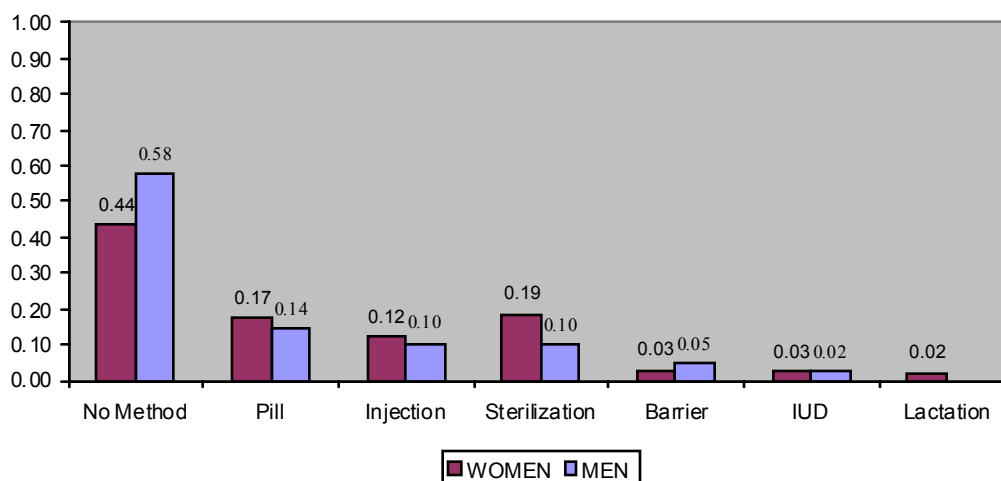
Knowledge of Family Planning Methods

Women were asked by interviewers to tell them the family planning methods they knew. In NICASALUD, 63 percent of women were able to mention three or more modern methods. The regional variation ranged from the largest proportion of knowledgeable women responding in the more developed Chinandega/León (75%) area and the lowest proportion in the most eastern and less developed area, Jinotega (55%). The only note-worthy PVO catchment area variation was for CRS, which reported the lowest knowledge level (26%).

Of the 120 women in NICASALUD who reported that they were not using a contraceptive (23% of the total sample) about half (54%) gave the lack of a partner as the reason. Other reasons varied considerably. Most women (87%) knew where to go to obtain contraceptives with little variation by region and only the CRS catchment area appreciably lower (63%).

Men and Women's Decision Making about Family Planning Method Use

Both women and men were asked who made the decision concerning family planning method choice. Among women 45 percent said that they were the principal decision-maker. Another 37 percent said that the decision was made jointly with a spouse/partner. Therefore, 82 percent of women perceived themselves as involved in making the family planning method choice. There were no meaningful geographical variations to note. However, CRS and ADRA did exhibit the lowest PVO percentages (63% for both).

Among men, 30 percent viewed women as the primary decision-maker, while 61 percent viewed the decision as being made jointly by the couple. These results when combined indicate that 91% of men viewed women as involved in making the choice of a family planning method. No substantial variation across regions or PVOs was observed.

Table 6. Family Planning Indicators for NICASALUD Baseline Survey				
Indicator	n	Mean	95% C I	
Women (15-49yrs, not pregnant) currently using a contraceptive method (CPR)	532	0.56	0.5210	0.6071
Most recent births spaced by at least 24 months of mothers with children 0-11 mo.	532	0.42	0.3725	0.4580
Most recent births spaced by at least 36 months of mothers with children 0-11 mo.	532	0.21	0.1777	0.2488
Women (15-49yrs, not pregnant) who report birth interval should be at least 24 months	455	0.89	0.8445	0.9355
Women (15-49yrs, not pregnant) who report birth interval should be at least 36 months	455	0.51	0.4695	0.5505
Women (15-49yrs, not pregnant) who do not want more children	425	0.76	0.7190	0.8019
Most recent pregnancy was unintended of mothers with children 0-11 mo.	524	0.57	0.5309	0.6174
Women (less than 24 years with at least one child) who had first birth before age 20	122	0.88	0.8250	0.9417
Men (15-49yrs) currently using a contraceptive method	520	0.42	0.3765	0.4635
Women (15-49yrs, not pregnant) view women as decision-makers for family planning	296	0.45	0.3912	0.5071
Women (15-49yrs, not pregnant) view couple as decision-makers for family planning	296	0.37	0.3160	0.4286
Men (15-49yrs) view women as decision-makers for family planning	220	0.30	0.2108	0.3868
Men (15-49yrs) view couple as decision-makers for family planning	220	0.61	0.5176	0.6994

Safe Motherhood and Newborn Care

This section presents responses to safe motherhood questions concerning pre-natal care, delivery, post-natal care, maternal nutrition, and newborn care. Depending on the question, the following groupings were sampled in NICASALUD: women, men, and mothers with children 0-11 months. The two former groups were asked *knowledge* questions as it is a premise of the projects that women and men should be knowledgeable about this topic. The mothers were asked *behavior* questions to assess safe motherhood practices. When ascertaining care just prior to and after delivery, the responses of a sub-sample of mothers (those with children 0-5 months) are analyzed in an attempt to reduce recall bias in the analysis. All of the following sections analyze behavior first and then knowledge responses.

Maternal Health Card

As maternal cards contain important information for monitoring maternal care, the baseline measured the proportion of recent mothers who had cards. A little more than half (56%) of mothers with children 0-11 months surveyed had maternal health cards. There was no major variation by region or by PVO catchment area with the exception of the CRS catchment area where only 35 percent had cards.

Pre-Natal Care

A majority of mothers of children 0-11 months (71%) report that they received iron supplements during their pregnancy. The remote Jinotega (58%) catchment areas that include CRS (49%) and HOPE (51%) exhibited the lowest coverage. This same group of mothers was asked whether they took a malaria prophylaxis during their pregnancy of which 14

percent reported they did. Estelí/Madríz reported only 2 percent of mothers taking malaria prophylaxis, whereas the other areas reported at least 16 percent of mothers taking antimalarials. Substantial PVO variation existed in which ADRA and CARE reported no more than 3 percent coverage while HOPE and PLAN reported at least 28%. The rest approximate the mean coverage.

A sub-sample of mothers (those with children 0-5 months) was used to assess the most recent behavior of mothers with infants. Almost all mothers (90%) in NICASALUD said they had received pre-natal care by a clinically trained provider. While it is possible that they did have contact with *parteras* (Traditional Birth Attendants), they also consulted clinicians. There was little variation by region, although remote Jinotega (87%) was somewhat lower than the more developed Chinandega/León (96%). The proportion receiving pre-natal care by a clinically trained provider was at least 80 percent in all PVO catchment areas with the exception of CRS where 69 percent was reported.

However, less than half of all mothers had at least one pre-natal visit recorded on a maternal health card (46%). When the denominator is changed to include only mothers who have cards, a similar pattern emerges to what was revealed in the verbal reports. Eighty-three percent had at least one pre-natal visit. However, an interesting geographical pattern emerged in further analyses. In Chinandega/León, the most developed program area located in the west, almost all mothers with a maternal card had at least one pre-natal visit recorded (94%). Estelí/Madríz, the next less developed area located in the central part of Nicaragua, exhibited slightly fewer mothers with cards who had pre-natal visits (84%). In Jinotega, the least developed area located toward the east central part of Nicaragua, the smallest proportion of women with cards had a prenatal visit recorded (75%). These results suggest a relationship between the remoteness of an area and the access of mothers to prenatal visits.

As both men and women in the program area ought to be knowledgeable of prenatal danger signs the questions in this section were asked of both women and men 15-49 years. Only 10 percent of the men and 21 percent of women knew two or more pregnancy danger signs. Analyses reveal some variation with the remote CRS catchment area exhibiting lower knowledge levels for both men and women (7% men and 2% women).

Table 7. Safe Motherhood Indicators for NICASALUD Baseline Survey				
Indicator	n	Mean	95% C I	
Health cards	532	0.56	0.5143	0.6005
Mothers of children 0-11mo. who received iron supplements during pregnancy	532	0.71	0.6670	0.7461
Mothers of children 0-11 mo. who took antimalarials while pregnant	532	0.14	0.1110	0.1715
Mothers of infants 0-5 mo. who received prenatal care from clinically trained provider	263	90.00	0.8664	0.9395
Mothers of infants 0-5 mo. who received any prenatal care	263	92.00	0.8838	0.9517
At least one prenatal visit recorded on MH card of mothers with children 0-11 mo.	532	0.46	0.4198	0.5063
At least one prenatal visit recorded on MH card of mothers with children 0-11 mo. Children with MH cards	293	0.83	0.7810	0.8698
Men (15-49yrs) who know 2 or more danger signs during pregnancy	520	0.10	0.0736	0.1263
Women (15-49yrs, not pregnant) who know 2 or more danger signs during pregnancy	532	0.21	0.1793	0.2506

Delivery

For NICASALUD as a whole, 52 percent of mothers with children 0-11 months had their most recent birth attended by trained medical personnel. Although little regional and PVO variation was observed, a notable exception was CRS (23%) whose medical attendance proportion was appreciably lower. This NICASALUD result is lower than the 1999 DHS, which reports the proportion of live births attended by trained medical personnel in the last five years was at 81 percent. Further refined analyses reveal that about half of the mothers (52%) reported that a physician had attended their delivery with an additional 29 percent delivered by a *partera*. A remaining 4 percent was attended by a nurse.[3] A total of 11 percent, however, were delivered either by the mother herself or by another family member. This latter finding indicates problems of access to trained clinicians.

Forty-five percent of mothers delivered in a hospital and 56 percent delivered at either a hospital, health center, or health post. However, a substantial proportion delivered at home (42%). Of those who delivered at home, 67 percent of them were attended by a *partera* (a Traditional Birth Attendant).[4] The remaining mothers were assisted by either a family member or someone else, or she delivered alone (18%, 5% 8%, respectively). Comments made to interviewers suggest that lack of transport or roads was a barrier to delivery in a health facility. Interestingly the proportion of births attended by medically-trained providers (52%), was lower than the proportion of recent mothers who received pre-natal care from a clinically trained provider (90%), which gives credibility to the anecdotal information just reported.

With respect to knowledge of where to seek treatment and danger signs during delivery, most men and women knew the closest place for a woman to deliver a baby (91% for both sexes).

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[3] The individual proportions of health professionals who attended deliveries sums to 56% rather than 52% because they have not been weighted by populations sizes.

[4] The preceding percentages in this paragraph are not weighted by population size. The remaining proportions are weighted.

There was little variation by region or PVO catchment area. Only 11 percent of men and 18 percent of women, however, were able to mention two or more danger signs during delivery. The remote area of Jinotega exhibited low proportions (8% men, 14% women) while the PVO in the more remote section of Jinotega, CRS, had even lower proportions (2% men, 9% women).

Table 8. Safe Motherhood Indicators for NICASALUD Baseline Survey			95% C I	
Indicator	n	Mean		
Births attended by medically trained health personnel of mothers with children 0-11 mo.	532	0.52	0.4783	0.5650
Men (15-49yrs) who know closest place for woman to deliver baby	519	0.91	0.8793	0.9308
Women (15-49yrs, not pregnant) who know closest place for woman to deliver a baby	529	0.91	0.8873	0.9367
Men (15-49yrs) who know 2 or more danger signs during delivery	520	0.11	0.0851	0.1407
Women (15-49yrs, not pregnant) who know 2 or more danger signs during delivery	532	0.18	0.1463	0.2130

Post-Natal

About 51 percent of mothers of infants 0-5 months reported that they had been seen by a clinically trained provider for post-natal care. Proportions ranged from 41 percent in Jinotega to 67 percent in Estelí/Madríz. Variation among PVOs ranged from the CRS catchment area reporting the lowest (22%) to PARTNERS reporting the highest (71%).

Nearly two-thirds of recent mothers who had received post-natal care also had received information about family planning during their visit (62%). Family planning information provision was lowest in the remote area of Jinotega (44%), which includes the new project site of Hope (29%).

Only a fourth (28%) of the mothers interviewed reported receiving Vitamin A within two months after delivery. The highest proportion was in Chinandega/León (35%) and in the PLAN catchment areas (47%), and lowest in the CRS catchment area (15%).

Men's knowledge of danger signs post-partum was somewhat better than during pregnancy or delivery. For NICASALUD as a whole, 17 percent of men surveyed were able to mention two or more danger signs after delivery; lowest for Jinotega (13%), for the PARTNERS (5%), and CRS (7%) catchment areas. For women, a fourth (26%) mentioned two or more danger signs after delivery, again lower in the catchment areas for PARTNERS (15%) and CRS (16%), but with little variation by region.

Table 9. Safe Motherhood Indicators for NICASALUD Baseline Survey

Indicator	n	Mean	95% C I	
Postnatal care rec'd from clinically trained provider by mothers of children 0-5 mo.	257	0.51	0.4500	0.5750
Info about family planning rec'd during post-natal visit by mothers of children 0-11 mo.	532	0.40	0.3606	0.4458
Mother of child 2-11 mo. rec'd VitA within first 2 months after delivery	462	0.28	0.2405	0.3243
Men (15-49yrs) who know 2 or more danger signs after delivery	520	0.17	0.1389	0.2052
Women (15-49yrs, not pregnant) who know 2 or more danger signs after delivery	532	0.26	0.2173	0.2929

Newborn Care

Mothers with children 0-11 months were asked about newborn care behaviors while women 15-49 years were asked about knowledge. About half (55%) of the mothers had had their babies placed with them immediately after birth. The proportion was highest in Estelí/Madríz (67%) and in the catchment area for CARE (79%). Most mothers reported that the cord had been kept clean a week after delivery (77%). While there was little variation, the lowest proportion of mothers reporting a clean cord was in Jinotega (70%) and in the remote CRS catchment area (58%).

The proportion of newborns who received care from a clinically trained provider was 70 percent. There were minor variations by region and PVO catchment area for these two indicators. The data do show, however, that some mothers were checked without having their babies checked and vice versa. Although few mothers received care from a clinically trained provider without their newborn also receiving care (13%), 42 percent of the newborns received care without the mother receiving care. Qualitative investigations could be used to study this anomaly.

Fig. 4 Mothers and Infants who Received Care from Clinically Trained Provider in NICASALUD: November 1999 - January 2000

Legend:
- Mothers of Infants 0-5 mo. who Received PreNatal Care from Clinically Trained Provider
- Births Attended by Medically Trained Health Personnel of Mothers with Children 0-11 mo.
- Post-natal Care Rec'd from Clinically Trained Health Provider by Mothers of Children 0-5 mo.
- Newborn Rec'd Care from Clinically Trained Health Provider as Reported by Mother of Child 0-5 mo.
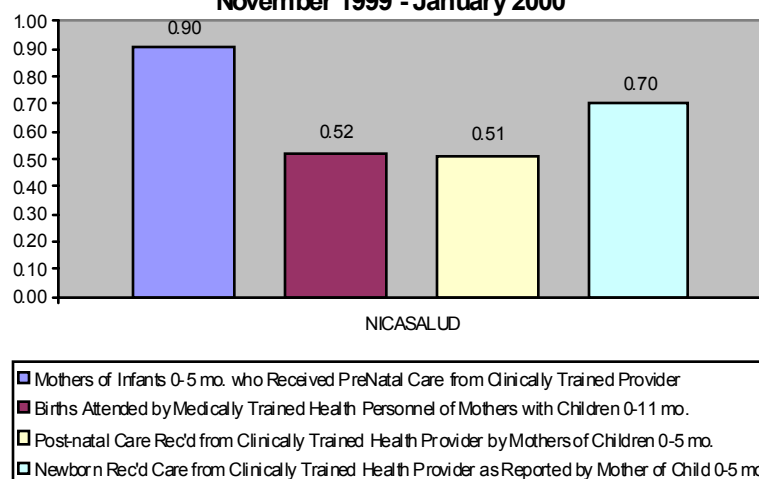
With respect to knowledge, the baseline survey asked mothers to tell danger signs for newborns. Only 22 percent could tell 2 or more danger signs. The more developed Chinandega/León area has a higher proportion of knowledgeable women (37%), as contrasted with Estelí/Madríz in which 14 percent were knowledgeable about newborn danger signs. Among the PVOs, ADRA, CARE, CRS, and HOPE had knowledge proportions ranging from 11-14 percent, while the remaining ranged from 22-37 percent.

Table 10. Safe Motherhood Indicators for NICASALUD Baseline Survey				
Indicator	n	Mean	95% C I	
Newborns placed with mother immediately after delivery as reported by mother of children 0-11 mo.	532	0.55	0.5069	0.5932
Mothers report cord clean after first week of delivery of child 0-11 mo.	532	0.77	0.7385	0.8110
Newborn rec'd care from clinically trained health provider as reported by mother of child 0-5 mo.	263	0.70	0.6447	0.7578
Women know 2 or more signs of sick newborn	532	0.22	0.1860	0.2581

Summary of Knowledge of Maternal Complications

Although almost none of the men (2% overall) were able to mention at least two danger signs during pregnancy, delivery, and after delivery, almost all (94%) said they knew where to take a woman who had maternal complications. The pattern was the same for women (6% knew maternal complications but 97% knew where to go to seek treatment for maternal complications). This result suggests that lack of knowledge of danger signs could result in a delay in making a decision to take a woman experiencing maternal complications for treatment or in she herself deciding to go.

Fig. 5 Men and Women's Knowledge of Maternal Complications in NICASALUD: November 1999 - January 2000
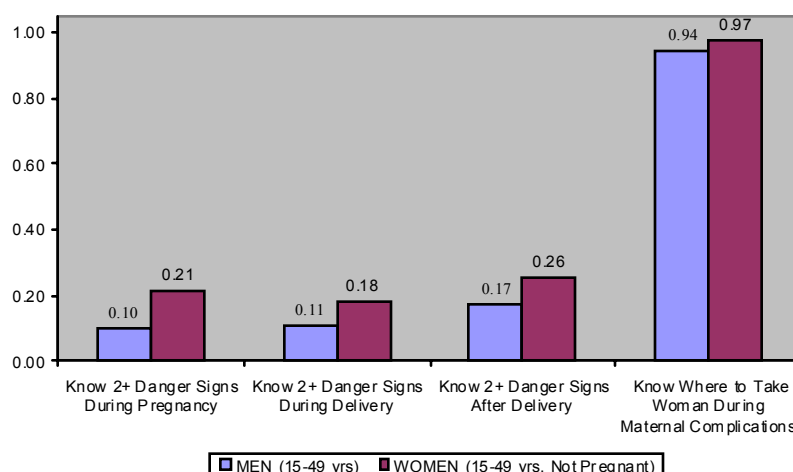
Women's and Men's Decision-Making on Treatment Seeking for Women

Women 15-49 years were asked who made the decision regarding when they could go to a health facility when they needed treatment. About half (49%) said that they were the principal decision-maker and an additional 9 percent said that they made the decision along with their husbands/partners. Therefore, in total, 58 percent of women reported that they participated in decision making. It is interesting to note that women felt that they had a

greater say in when to take a sick child for treatment than in when they could go for treatment themselves (89% and 58%, respectively). (The *sick child* decision making is reported in the section on Child Survival.)

Men 15-49 years were also asked the same questions concerning decision making. Twenty-three percent of men said that women were the principal decision-makers determining when their wives/partners could go for treatment. An additional 16 percent said both they and their wives/partners decided. In total, only 39 percent of men said that their wives/partners participated in decision making. Comparatively, women (58%) tended to report they were more often engaged in their own treatment seeking decision making. Interestingly, in one PVO catchment area, PARTNERS, more women reported they participated in decision making about their own treatment-seeking (84% women) than in any other area of NICASALUD. Men, however, did not exhibit this same opinion in the PARTNERS' catchment area.

Table 11. Safe Motherhood Indicators for NICASALUD Baseline Survey				
Indicator	n	Mean	95% C I	
Men (15-49yrs) who know 2 or more danger signs of maternal complications	520	0.02	0.0110	0.0383
Men (15-49yrs) who know where to take woman during maternal complications	520	0.94	0.9203	0.9617
Women (15-49yrs, not pregnant) who know 2 or more danger signs of maternal complications	532	0.06	0.0417	0.0838
Women (15-49yrs, not pregnant) who know where to take woman during maternal complications	532	0.97	0.9612	0.9884
Women (15-49yrs, not pregnant) view women as decision-makers in seeking care for ill woman	532	0.49	0.4450	0.5318
Men (15-49yrs) view women as decision-makers in seeking care for ill woman	520	0.23	0.1976	0.2720
Women (15-49yrs, not pregnant) view couple as decision-makers in seeking care for ill woman	532	0.09	0.0650	0.1147
Men (15-49yrs) view couple as decision-makers in seeking care for ill woman	520	0.16	0.1261	0.1901

Child Survival

This section uses data from two cohorts of mothers, namely, those with children 0-11 months and those with children 12-23 months. In most cases, questions were asked of mothers which reflected their most recent behavior or effect of the health system. For questions that either cohort could have been asked, we attempted to select one or the other based on the length of the questionnaire since we wanted to keep both instruments short. Questions concerning treatment of sick children were placed in both instruments; since the only children that were included in this analysis were those who had been ill in the last 2 weeks, the sample size would have been very small had we not included the questions in both instruments.

Growth Monitoring

Of the 532 mothers with children 0-11 months included in the sample, 78 percent were able to show the interviewer their children's growth card at the time of the survey. The proportion was marginally lower in Jinotega (72%), and the CRS (35%) catchment area was substantially lower. A sub-sample of mothers of children 2-11 months reported that 73

percent of their children had been weighed in the last 2 months.[5] Again, results were lower in Jinotega (62%) and in the CRS catchment area (48%).

**Fig. 6 Growth Monitoring of Children 12-23 Months
by Region and in NICASALUD:
November 1999 - January 2000**

Legend:
- Growth Card with Mothers of Children 0-11 mo.
- Mothers of Children 2-11 mo. who had their Child Weighed in the Past 2 Months
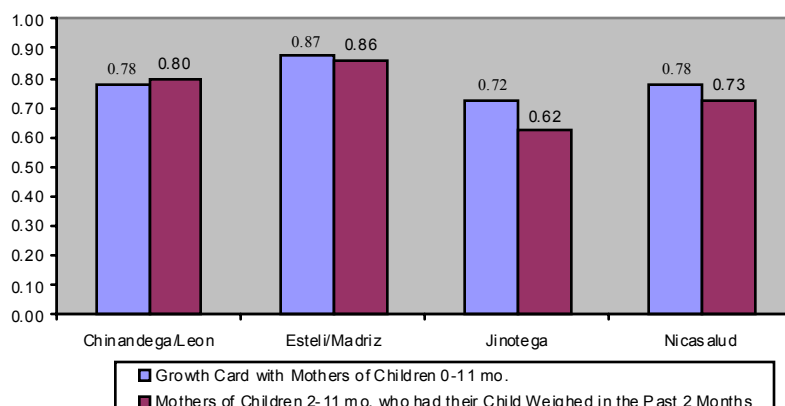
Table 12. Growth Monitoring Indicators for NICASALUD Baseline Survey				
Indicator	n	Mean	95% C I	
Growth card with mothers of children 0-11 mo.	532	0.78	0.7401	0.8124
Mothers of children 2-11 mo. who had their child weighed in the past 2 months	462	0.73	0.6840	0.7671

Childhood Immunization

All children 12-23 months were included in this analysis as all of them should have completed their *first year of life* vaccination schedule. Using WHO's standard, only vaccinations recorded on a vaccination card with a date were considered as acceptable. The denominator consisted of all children in the 12-23 month age range.

The childhood vaccination schedule required by the Ministry of Health (MINSA) during the time of the baseline survey is displayed in Table 13. MINSA has an overall goal of 90 percent full coverage by all antigens. The analyses in this section are only of vaccinations in the first year of life. The measles vaccine is no longer given in Nicaragua during the first year. MINSA protocol now schedules the measles, mumps, rubella (MMR) vaccination at 12 months. MMR was introduced into the government immunization program only about two years ago, replacing the measles vaccine. Therefore, as the measles vaccine is not included in the year one vaccination schedule, it is not included as a part of this assessment.

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[5] As all mothers should have had their children weighed in the previous two months, children who had not reached two months of ages were excluded from the sample.

Table 13. Childhood Vaccination Schedule for Nicaragua by the Ministry of Health					
Newborn	2 Months	4 Months	6 Months	1 Year	
BCG	DPT1	DPT2	DPT3	MMR	DPT Booster
	Polio 1	Polio2	Polio3		Polio

Eighty-eight percent of respondents with children 12-25 months had a vaccination card. This is nearly the same percentage that had been vaccinated with BCG (82%). Regional variation was negligible. However, BCG and card retention coverage were highest in the ADRA catchment area (97%), although vaccination card retention was high in all catchment areas. If more mothers had kept vaccination cards, this would probably have resulted in an increased percentage of children counted as immunized.

About three-quarters of children 12-23 months had received three polio and DPT doses (77% and 76%, respectively) by age 12 months. Although little regional variation was detected, coverage for Polio1-3 in Jinotega was lower (69%), as was coverage in the CRS catchment area (59%). The dropout rate, estimated as the difference of DPT1 coverage compared to DPT2, was 11 percent. Substantial regional variation occurred with the more developed Chinandega/León and Estelí/Madríz areas exhibiting dropout rates of 4 and 2 percent, respectively, while the more remote Madríz Jinotega had 19 percent dropouts.

As MMR is given during the second year, vaccination coverage ought to be assessed in a cohort of children 24-36 months which is not included in this sample. However, for monitoring purposes we note that MMR coverage in the 12-23 month cohort at the time of the survey was 76%. Interestingly, Estelí/Madríz coverage at 90 percent was the highest, while coverage in Jinotega was the lowest at 65%. The reason may be due to having CARE and ADRA working in Estelí/Madríz where their programs have been established for some time. CRS and HOPE, whose programs are nascent, exhibited the lowest coverage (54% and 56%, respectively). A frequency distribution by age is included in Figure 7a, which displays age specific coverage by month.[6]

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[6] MMR can be given as early as 9 months although it is not consistent with the MINSA vaccination schedule and is somewhat less effective. However, as the vaccination is effective at 9-11 months, vaccinations given during this age range were counted as effective.

Fig. 7a Vaccination Coverage with MMR Among Children 12-23 Months, Stratified by Age (in months)
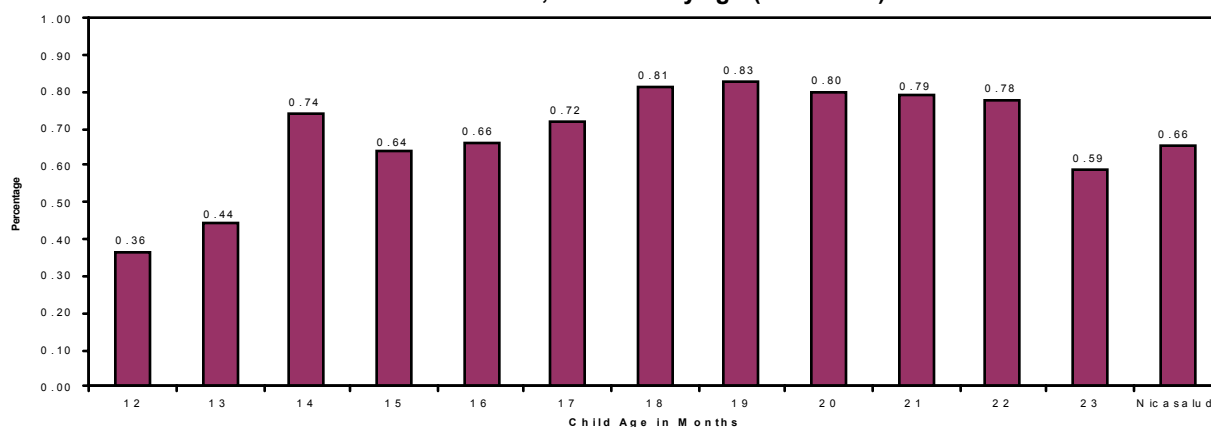
Full child immunization in the first year of life was calculated using only BCG, DPT 1-3, and polio 1-3. Although measles is normally included in this calculation, we cannot do so since measles in not given until the second year in the MMR vaccination. Using these criteria, 71 percent of children were vaccinated with the seven antigens before their first birthday. Fewer children were fully vaccinated in Jinotega (61%) and the remote CRS catchment area (48%). See figure 7b below.

Fig. 7b Vaccination Coverage of BCG, Polio1-3, DPT1-3, MMR, Fully Vaccinatied for Children 12-23 months using the Vaccination Card: November 1999 - January 2000

☐ Vaccination Coverage with BCG by 12 mo. for Children 12-23 mo. Using the Vaccination Card
☐ Vaccination Coverage with Polio1-3 by 12 mo. for Children 12-23 mo. Using the Vaccination Card
☐ Vaccination Coverage with DPT 1-3 by 12 mo. for Children 12-23 mo. Using the Vaccination Card
☐ Vaccination Coverage with MMR for Children 12-23 mo. Using the Vaccination Card
■ Complete Vaccination Coverage by 12 mos. For Children 12-23 mo. With Polio1-3, DPT1-3, BCG Using the Vaccination Card

Table 14. Child Vaccination Indicators for NICASALUD Baseline Survey				
Indicator	n	Mean	95% C I	
Vaccination card with mothers of children 12-23 mo.	531	0.88	0.8464	0.9038
Vaccination coverage with BCG by 12 mo. for children 12-23 mo. using the vaccination card	531	0.82	0.7913	0.8487
Vaccination coverage with Polio1-3 by 12 mo. for children 12-23 mo. using the vaccination card	531	0.77	0.7266	0.8134
Vaccination coverage with DPT1-3 by 12 mo. for children 12-23 mo. using the vaccination card	531	0.76	0.7166	0.8034
Drop-out rate of children 12-23 mo. vaccinated for DPT (DPT1-DPT3) using the vaccination card	448	0.11	0.0771	0.1354
Vaccination coverage with MMR by 12 mo. for children 12-23 mo. using the vaccination card	531	0.76	0.7177	0.8023
Complete vaccination coverage of children 12-23 mo, with Polio1-3, DPT1-3, BCG	531	0.71	0.6671	0.7529

Tetanus Toxoid Immunization

Mothers of children 0-11 were asked whether they had received tetanus toxoid vaccination and when they received them. Maternal vaccination cards were also checked. The coverage proportions reported here include: at least 1 dose or 2 doses during the most recent pregnancy, or 5 doses during a lifetime. All data used in the analysis consist of vaccination card entries. While only 4 percent had lifetime immunity, 10 percent of mothers and their children were protected, as they received 2 doses during their last pregnancy or five in a lifetime; and 32 percent had received at least 1 dose during their pregnancy or five in a lifetime. No region or PVO exhibited substantially higher coverage proportions.

With respect to the knowledge of mothers, 48 percent knew that TT vaccinations received during pregnancy protect the infant. Small amounts of regional and PVO variation was noted, although ADRA did have 71 percent of mothers knowing that infants were protected by TT vaccinations of the mother. Only 32 percent knew that TT protects both the mother and child, with little variation by region. Knowledge was highest in the PCI and CARE catchment areas (53% and 46%, respectively) and lowest in the CRS and HOPE areas (17% and 18%).

Table 15. Maternal Vaccination Indicators for NICASALUD Baseline Survey				
Indicator	n	Mean	95% C I	
At least 5 TT vaccinations recorded on maternal health card of mothers with children 0-11 mo..	532	0.04	0.0202	0.0527
At least 2 TT during last pregnancy or 5 TT vaccinations over lifetime recorded on MH card of mothers with children 0-11 mo.	532	0.10	0.0714	0.1228
At least 1 TT during last pregnancy or 5 TT vaccinations over lifetime recorded on MH card of mothers with children 0-11 mo.	532	0.32	0.2764	0.3572
Mothers of children 0-11 mo. who know that TT protects infant	532	0.47	0.4314	0.5181
Mothers of children 0-11 mo. who know that TT protects both mother and infant	532	0.32	0.2763	0.3571

Breastfeeding and Complementary Feeding

Mothers with children 0-11 months were asked questions about whether they breastfeed, when breastfeeding was initiated, whether they had introduced various types of complementary foods, and when they felt mothers should discontinue breastfeeding and introduce other foods. However, the analyses used various sub-samples of mothers depending on the specific indicator. For example, assessment of *exclusive breastfeeding* included mothers of children 0-5 months. Assessment of *complementary breastfeeding* practices included mothers of children 6-9 months. To assess *continuing breastfeeding*, mothers with children 12-23 months were asked if they were still breastfeeding at the time of the survey.

Throughout NICASALUD, 35 percent of mothers with children 0-5 months reported that they were exclusively breastfeeding at the time of the interview. The proportion of mothers exclusively breastfeeding was especially low in the more developed Chinandega/León Region (16%). The PVO catchment areas are not analyzed for this sub-sample for this indicator due to the small sample size.

A trend analysis of exclusive breastfeeding indicates a rapid decline by the second month of life. About 61-63 percent of mothers reported that they were exclusively breastfeeding during 0-1 months. In the second and third months, only 44 percent and 21 percent, respectively, exclusively breastfed their babies. While in the fourth and fifth months of age only 16 percent did so (See Figure 8, Breastfeeding and Supplemental Feeding Trends).

Fig. 8 Exclusive Breastfeeding Practice Compared to Infant Feeding with Solids and Other Liquids in a Cohort of Infants 0-11 Months
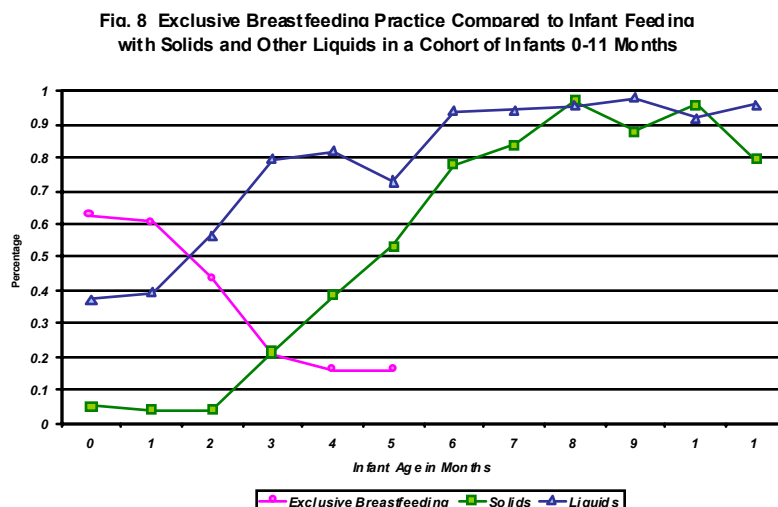
Interestingly, the percentage of mothers with children 0-11 months who began breastfeeding within the first hour after birth (63%) was identical to the proportion who exclusively breastfed in the first month of life. This potential relationship between the time breastfeeding begins and the proportion of mothers who exclusively breastfeed during the first month indicates that this time interval should be the focus of qualitative analyses, since the project may be able to uncover ways to increase both indicators. Also of interest is that the highest proportion of mothers who started breastfeeding immediately was in the PLAN catchment area (80%). However, as reported above, PLAN exhibited the lowest proportion of mothers

exclusively breastfeeding children 0-5 months (6%). Thus while PLAN mothers embrace some essential breastfeeding practices, there were obvious gaps in their practices that the project will need to address.

The majority of mothers (69%) of children 6-9 months reported that they were giving complementary foods by age 6-9 months. Complementary breastfeeding, like exclusive breastfeeding, was lowest in the Chinandega/León Region (50%) and highest in Estelí/Madríz (81%). The reason behind this result could be investigated with qualitative methods. Continuing breastfeeding was assessed among mothers with children 12-23 months. Forty-nine percent reported that they were continuing to breastfeed their children at the time of the survey with little regional variation.

Knowledge about when to commence complementary breastfeeding was assessed using the responses of mothers with children 0-11 months. A total of 42 percent knew that children should be given complementary foods at age 6 months. The lowest proportions were exhibited in Chinandega/León (29%) and in the SAVE (29%) and PLAN (30%) catchment areas located in that region. These *knowledge* results are of a similar pattern to what was found in the analysis of *behavior*.

Table 16. Breastfeeding Indicators for NICASALUD Baseline Survey				
Indicator	n	Mean	95% C I	
Exclusive breastfeeding among mothers of infants 0-5 mo.	263	0.35	0.2885	0.4062
Mothers of children 0-11 mo. who gave newborn milk within first hour	532	0.63	0.5926	0.6762
Complimentary breastfeeding among mothers of children 6-9 mo.	191	0.69	0.6270	0.7608
Children 12-23 mo. currently being breastfed by mothers	531	0.49	0.4482	0.5350
Mothers of children 0-11 mo. who know to start complimentary breastfeeding at age 6 months	532	0.42	0.3728	0.4584

Infections and Treatment of the Sick Child

This section reports the responses of mothers with children 0-11 months and 12-23 months of age, and of men 15-49 years. While knowledge questions report responses for a given sampling universe of children, responses concerning sick children are aggregated from both universes and reported for children 0-23 months.

Prevalence of Infections

When mothers of children 0-23 months were asked whether their child had had diarrhea, a cough and rapid breathing, or a fever within two-weeks of the survey, the following prevalence measures resulted: diarrhea (30%), cough and rapid breathing (54%), and fever/presumed malaria (26%).

Table 17. Reported Prevalence for Three Categories of Illness in NICASALUD Catchment Areas	
Illness	Reported Prevalence for All NICASALUD PVO Catchment Areas
Diarrhea	30%
Cough/Rapid Breathing	54%
Fever/Presumed Malaria	26%

Men and Women's Decision-Making for Treatment Seeking for a Sick Child

Mothers of children 0-11 months were asked who decided when to take a sick child to a health facility for treatment. Nearly three-fourths (72%) said that they decided when to take their sick child for treatment; an additional 17 percent said the decision was made jointly with their husbands/partners. Mothers saw themselves as major decisions makers in all regions and in all PVO catchment areas. Men, on the other hand, saw women as the primary decision-maker only 28 percent of the time with 39 percent reporting joint decision making with their wives/partners. Men saw women as the primary decision-maker to a greater extent in PLAN (50%) and CRS areas (43%). Interestingly enough, more mothers in the PLAN area also saw themselves as the primary decision-maker (83%) than in any other PVO catchment area.

Table 18. Sick Child Decision-making, Treatment Seeking and Practices Indicators for NICASALUD Baseline Survey				
Indicator	n	Mean	95% C I	
Mothers of children 0-11 mo. view women as decision-makers in seeking care for sick child	532	0.72	0.6835	0.7613
Mothers of children 0-11 mo. view couple as decision-makers in seeking care for sick child	532	0.17	0.1401	0.2057
Men (15-49yrs) view women as decision-makers in seeking care for sick child	520	0.28	0.2440	0.3232
Men (15-49yrs) view couple as decision-makers in seeking care for sick child	520	0.39	0.3434	0.4288

Diarrhea

Of the total number of children 0-23 months in the sample, 30 percent had had diarrhea within two-weeks of the survey. The prevalence of diarrhea in the NICASALUD catchment areas was higher than the 21 percent prevalence reported in the 1998 DHS. Not surprisingly, the prevalence was higher in Jinotega (38%). As only a small number of children were ill with diarrhea in any given PVO catchment area, these data are not reported.

Of the children whose mothers reported that they had had diarrhea, 75 percent reported they had given their child the same or more liquids. Only 19 percent, however, reported giving ORS. About half (53%) reported giving the same or more food during the illness.

With respect to treatment seeking, 16 percent of the mothers took their ill child to a health facility, almost all of whom could provide its name. Little variation was exhibited across the regions.

With respect to other treatment choices, 18 percent of mothers of sick children reported giving an antibiotic to treat their children; an additional 12 percent indicated they gave an antidiarrheal.

Despite low reported use of ORS, we reiterate that 75 percent of mothers gave their child the same or more liquids. Additional questions were asked of one cohort of mothers (those with children 0-11 months) to assess their knowledge regarding ORS. More than half (58%) could correctly explain how to prepare ORS, and 43 percent were able to correctly demonstrate ORS preparation. Qualitative methods can be used to explore why knowledge of ORS has not translated into practice. A possible reason could be the relatively low level of knowledge about the role of ORS in preventing dehydration or about the dangers of dehydration. However, in order for this linkage to be effective, mothers must first be aware that dehydration is pernicious. Only 43 percent of the mothers surveyed with children 12-23 months knew at least two danger signs of dehydration. Knowledge was lowest in Jinotega (34%). PVO areas with lowest knowledge about danger signs were also located in this region: CRS (15%), PARTNERS (28%), and HOPE (33%).

Table 19. Diarrheal Disease Indicators for NICASALUD Baseline Survey				
Indicator	n	Mean	95% C I	
Children 0-23 mo. who have had diarrhea in the past 2 weeks	1063	0.30	0.2753	0.3317
Mothers gave the same or more liquid to children 0-23 mo. who had diarrhea in the past 2 weeks	307	0.75	0.7464	0.7464
Mothers gave ORS to children 0-23 mo. who had diarrhea in the past 2 weeks	307	0.19	0.1888	0.1888
Mothers gave the same or more food to children 0-23 mo. who had diarrhea in the past 2 weeks	307	0.53	0.5310	0.5310
Mothers took child 0-23 mo. to hospital, HC, or private clinic for diarrhea in past 2 weeks	307	0.16	0.1579	0.1579
Mothers gave antibiotics to children 0-23 mo. who had diarrhea in past 2 weeks	307	0.18	0.1774	0.1774
Mothers gave ORS and antibiotics to children 0-23 mo. who had diarrhea in past 2 weeks	307	0.03	0.0328	0.0328
Mothers gave antidiarrheals to children 0-23 mo. who had diarrhea in past 2 weeks	307	0.12	0.1163	0.1163
Mothers of children 0-11 mo. can explain how to prepare ORS	532	0.58	0.5813	0.5813
Mothers of children 0-11 mo. can demonstrate how to prepare ORS	532	0.43	0.4251	0.4251
Mothers know 2 or more danger signs of dehydration in children 12-23 mo.	531	0.43	0.4305	0.4305
Mothers who view couple as decision-makers in seeking care for sick child	532	0.17	0.1401	0.2057
Men (15-49yrs) view women as decision-makers in seeking care for sick child	520	0.28	0.2440	0.3232

Suspected Pneumonia

As noted earlier, among children 0-23 months, just over half (54%) of mothers reported their child had had a cough and rapid breathing in the two-week period preceding the survey with the highest proportion being in Chinandega/León (66%), which is a more developed area. Only PCI and PARTNERS worked in areas where the proportion of mothers with children

with a cough and rapid breathing was less than the NICASALUD average (34% and 40%, respectively). Their catchment areas are located in the more remote region of Jinotega.

For the subset of children whose mothers said that they had been ill with cough and rapid breathing, 32 percent took them to a health care facility. A similar percentage could name the facility. There was little variation by region and PVO for this indicator.

With respect to knowledge of pneumonia symptoms, few mothers (5%) in NICASALUD recognized two or more pneumonia danger signs that should prompt them to take their child to a health facility. In both the CRS and PARTNERS catchment areas, no mother mentioned any pneumonia danger sign that would prompt them to seek care for her child at a health facility.

Table 20. Acute Respiratory Infections/Pneumonia Indicators for NICASALUD Baseline Survey				
Indicator	n	Mean	95% C I	
Cough and rapid breathing present in child 0-23 mo. in past 2 weeks	1063	0.54	0.5446	0.5446
Mother took child 0-23 mo. with cough and rapid breathing to a hospital, HC or private clinic	596	0.32	0.2784	0.3547
Mothers know 2 or more danger signs of pneumonia in children 0-11 mo.	532	0.05	-0.1396	0.2407

Fever as an Indication of Malaria

About one fourth (26%) of all mothers of children 0-23 months surveyed said that their children had had a fever within two-weeks of the survey; included in this result are children who had had a fever at the time of the interview (5%). Further analyses were carried out of the 26 percent who had reported a recent illness with fever. Only 8 percent of mothers took their child for treatment or assessment on the first day they noticed the fever. Little variation was detected across regions.

Approximately 32 percent of households with children 12-23 months had bednets. The lower altitude and more developed area of Chinandega/León had the highest coverage (50%), while the other more mountainous regions had lower coverage (about 26%). Only 20 percent of households used nets that were in good condition and did not have holes. Further analyses revealed that only 14 percent of index children slept under the bednet. Refinements of these analyses reveal that 5 percent of households had insecticide impregnated nets.

The analysis considered net use only in households that had nets. First, 44 percent of households with nets used them for the child 12-23 months. There was no variation among regions. There are too little data to assess variation among PVOs. Second, only 16 percent of nets were impregnated with insecticide. And third, only 7 percent had been dipped in the previous 6 months.

In conclusion, use of bednets not only is low in NICASALUD, but those households that are using them tend not to assign them to children nor maintain them with insecticide.

Of the mothers who had children 12-23 months with a fever, a third (32%) had bednets (50% in Chinandega/León), but only 14 percent said that their children slept under the bednet.

Almost no one (<1%) gave her child an antimalarial before seeking treatment. These data suggest that NICASALUD has substantial work to carry out to enhance treatment related behavior of mothers.

Table 21. Fever, Malaria Treatment Seeking Behavior and Bednet Use Indicators for NICASALUD Baseline Survey				
Indicator	n	Mean	95% C I	
Fever present within last 2 weeks in children 0-23 mo.	1063	0.26	0.2589	0.2589
Fever present at time of interview in children 0-23 mo.	1063	0.05	0.0361	0.0627
Mother took child 0-23 mo. with fever in past 2 weeks for treatment same day fever noticed	266	0.08	0.0493	0.1172
Bednets in home of mothers with children 12-23 mo.	532	0.32	0.2798	0.3609
Nets in good condition of all households with mothers of children 12-23 mo.	525	0.20	0.1683	0.2387
Child slept under net in households of children 12-23 mo.	531	0.14	0.1108	0.1713
Nets soaked in insecticide of all households of children 12-23 mo.	531	0.05	0.0318	0.0700
Child slept under net in households of children 12-23 mo. with bednets	207	0.44	0.3710	0.5094

Iodized Salt
Most of the households (86%) used iodized salt, with little variation by region and by PVO.

HIV/AIDS and Other STIs
This section reports responses of men and women for questions concerning HIV/AIDS as well as other sexually transmitted diseases.
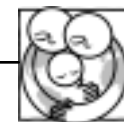
Awareness

Awareness of HIV/AIDS was high among both men and women. For all PVO catchment areas of NICASALUD, 95 percent of men had heard of HIV/AIDS with little variation by geographic area. Among women, 87 percent had heard of HIV/AIDS in NICASALUD with little regional or organizational variation (Figure 9).

Fig. 9 Men and Women's Knowledge of Hiv/AIDS and Condom Use in NICASALUD:
November 1999 - January 2000
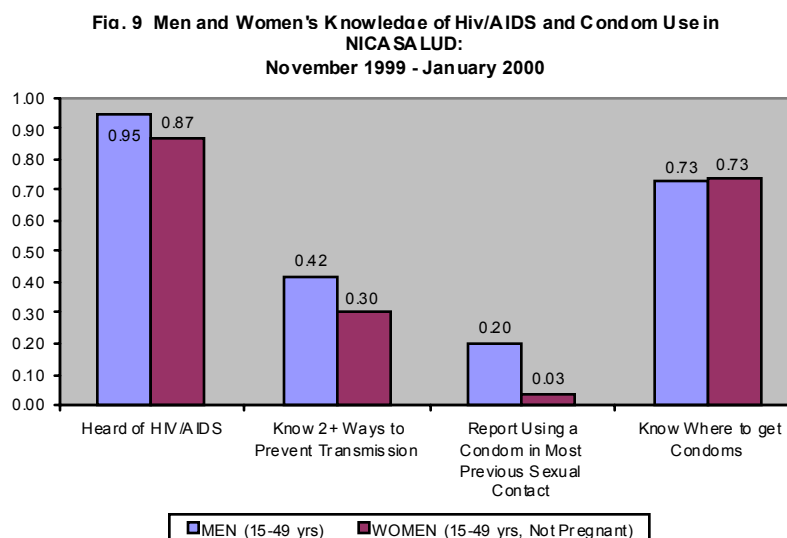
Although HIV/AIDS awareness was high, knowledge of ways to prevent HIV/AIDS transmission was not high. Among those aware of HIV/AIDS, only 42 percent of men and 30 percent of women in NICASALUD catchment areas were able to mention two or more ways HIV/AIDS transmission is prevented. Knowledge was lowest for both sexes in Jinotega (34% for women; 24% for men) and in the CRS (10% for women and 14% for men) catchment area. The most frequently mentioned ways of preventing HIV/AIDS were using condoms (48% women, 70% men), having one faithful sexual partner (19% women, 30% men), avoiding sex with prostitutes (17% women, 25% men), and avoiding sex with multiple partners (13% both women and men).[7]

Both men and women were asked if HIV/AIDS could be transmitted during pregnancy, delivery, or breastfeeding. Most men and women exhibited similar levels of knowledge about how HIV/AIDS could be transmitted through these transmission routes: during pregnancy (78% and 71%, respectively), through breastfeeding (70% and 61%, respectively), and during delivery (62% and 55%, respectively). Little variation was displayed geographically although the CRS catchment area had the lowest proportion.

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[7] Percentages should not be added since multiple responses were permitted.

Seventy-six percent of men and 60 percent of women had heard of other STIs. Among those who had heard of other STIs, knowledge of their symptoms was low. In NICASALUD, thirty-three percent of men were able to mention two or more symptoms in men while only 11 percent of women knew these symptoms. As for STI symptoms in women, only 12 percent of men and 14 percent of women knew two or more. As can be seen from the data displayed in the following graph, while men were somewhat knowledgeable about male STI symptoms, women were not. Neither men nor women were knowledgeable about STI symptoms in women. For these variables, knowledge was lower in Jinotega and in the CRS catchment area.

Fig. 10 Men and Women's Knowledge of Sexually Transmitted Infections in NICASALUD: November 1999 - January 2000
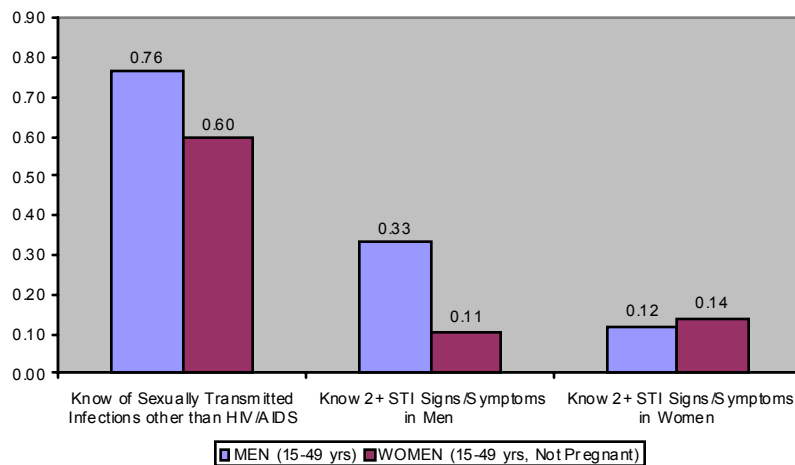
Table 22. HIV-STI Awareness and Knowledge Indicators for NICASALUD Baseline Survey				
Indicator	n	Mean	95% C I	
Men (15-49yrs) who have heard of HIV/AIDS	520	0.95	0.9264	0.9660
Women (15-49yrs, not pregnant) who have heard of HIV/AIDS	532	0.87	0.8429	0.9009
Men (15-49yrs) who know 2 or more ways to prevent transmission	520	0.42	0.3757	0.4623
Women (15-49yrs, not pregnant) who know 2 or more ways to prevent transmission	532	0.30	0.2602	0.3398
Men (15-49yrs) who know that HIV/AIDS can be transmitted during pregnancy	520	0.78	0.7413	0.8159
Men (15-49yrs) who know that HIV/AIDS can be transmitted during delivery	520	0.62	0.5764	0.6616
Men (15-49yrs) who know that HIV/AIDS can be transmitted during breastfeeding	520	0.70	0.6634	0.7436
Women (15-49yrs, not pregnant) who know that HIV/AIDS can be transmitted during pregnancy	530	0.71	0.6678	0.7470
Women (15-49yrs, not pregnant) who know that HIV/AIDS can be transmitted during delivery	511	0.55	0.5084	0.5983
Women (15-49yrs, not pregnant) who know that HIV/AIDS can be transmitted during breastfeeding	513	0.61	0.5667	0.6529
Men (15-49yrs) know of sexually transmitted infections other than HIV/AIDS	521	0.76	0.7222	0.8049
Women (15-49yrs, not pregnant) know of sexually transmitted infections other than HIV/AIDS	532	0.60	0.5525	0.6377
Men (15-49yrs) know 2 or more STI signs/symptoms in men	520	0.33	0.2900	0.3727
Women (15-49yrs, not pregnant) know 2 or more STI signs/symptoms in men	532	0.11	0.0806	0.1343
Men (15-49yrs) know 2 or more STI signs/symptoms in women	520	0.12	0.0924	0.1497
Women (15-49yrs, not pregnant) know 2 or more STI signs/symptoms in women	532	0.14	0.1096	0.1698

Condom Use

Men (20%) reported more frequent condom use in their most recent sexual experience than did women (3%). This gender difference should be explored using qualitative methods. Consistent with other variables, the percentage of men reporting condom use was lower in Jinotega (17%). For women, however, those in Estilí/Madríz reported the lowest use (1%). By PVO catchment area, reported use by men ranged from a low of 13-15 percent for PLAN, CRS, and HOPE to a high of 31 percent for SAVE. No woman reported using a condom in her last sexual contact in ADRA, CRS, or PCI areas; this stands in contrast to the PARTNERS' catchment area where the highest use was reported (18%). The low condom use among women is of particular interest in light of results reported earlier showing that both women and men agreed that women participated in selecting family planning methods. Although condoms may not be seen as being used primarily for family planning, what is clear is that women are seen as participating in decision making. Given this result, qualitative methods could be used to understand the low condom use pattern in the project area – especially among women.

Nearly three-fourths (73%) of both men and women knew where to get condoms. Little meaningful variation was observed across regions. By PVO catchment area, men's knowledge of where to get condoms ranged from 56 percent for CARE to 95 percent for ADRA. Women also exhibited a wide range of knowledge (CRS 51% and PARTNERS 59% versus CARE 79%, PCI 80%, and ADRA 89%).

Table 23. Condom Use Indicators for NICASALUD Baseline Survey				
Indicator	n	Mean	95% C I	
Men (15-49yrs) report using a condom in most previous sexual contact	461	0.20	0.1627	0.2373
Women (15-49yrs, not pregnant) report using a condom in most previous sexual contact	331	0.03	0.0147	0.0551
Men (15-49yrs) know where to get condoms	467	0.73	0.6841	0.7668
Women (15-49yrs, not pregnant) know where to get condoms	501	0.73	0.6947	0.7737

Water and Sanitation
Questions about water and sanitation were asked only in the survey of non-pregnant women 15-49 years. The large majority of women (81%) had "acceptable" sources of drinking water.[8] By region, only 72 percent of women in Jinotega reported acceptable sources of drinking water, whereas access to acceptable water sources was nearly universal in Chinandega/León. By catchment area, the lowest proportion of women who reported acceptable sources of drinking water were for CRS (59%). Although acceptable water sources were largely available, only 38 percent of the women reported that they could reach their source of water in 20 minutes or less. The greatest distances to obtain water were reported for Chinandega/León Region, where only 13 percent of women reported that they could reach their water source within 20 minutes. lowest access reported by catchment area was for PLAN (4% within 20 minutes). The majority of women (58%) stored water in a covered container, with a lower proportion reporting the use of covered containers in the Jinotega Region (46%) and in the catchment areas of CRS, HOPE, and PCI (45-46%).

The lowest access reported by catchment area was for PLAN (4% within 20 minutes). The majority of women (58%) stored water in a covered container, with a lower proportion reporting the use of covered containers in the Jinotega Region (46%) and in the catchment areas of CRS, HOPE, and PCI (45-46%).

The majority of women in NICASALUD areas (76%) had access to a latrine or toilet, ranging from 61 percent in the Jinotega region to 94 percent in Chinandega/León. Among the PVO catchment areas, access was lowest in the CRS (51%) and HOPE (56%) areas. Nearly all those with a latrine or toilet (97%) reported that it was used only by family members rather than shared. Data collectors who carried out a visual inspection reported that 76 percent of latrines or toilets were clean. More than half of the women reported that they disposed of children's feces in a sanitary manner (61%), with fewest women doing so in Jinotega (71%) and in the CRS and HOPE catchment areas (40% and 38%, respectively).

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[8] Acceptable sources of drinking water included tube wells, faucet inside house, public faucet, rain water, and water delivered by truck. Unacceptable sources included rivers and creeks or other sources of unpotable water.
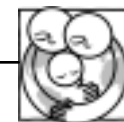
Women were asked when they should wash their hands. Correct responses were considered to be before preparing food, before eating, before feeding children, before feeding family members, after defecating/urinating, after cleaning a baby's bottom, and after throwing out a baby's feces. Any women who could mention three or more of these occasions when they wash their hands were considered to be washing their hands at correct times. For NICASALUD as a whole, 46 percent of all women reported washing their hands at correct times. There was little variation by geographic region, but only 28 percent of women reported that they were washing their hands at correct times in the ADRA catchment area. Nearly half of women surveyed (45%) reported that they washed their hands with soap. There was little variation by region, but fewer women in the ADRA and CRS catchment areas (25% and 34%, respectively) used soap.

Women were asked how they disposed of trash. They were considered to be disposing of trash safely by burning it, having it picked up by a truck, or by burying it. Throwing trash in an open ditch or throwing it "anywhere" was not considered to be an environmentally safe method of disposing of trash. More than three-fourths of those surveyed (77%) reported that they disposed of trash in a safe manner. Safe trash disposal methods were reported less frequently in Jinotega (67%) than in other regions, and in the catchment areas of CRS (66%), HOPE (65%), and PARTNERS (66%).

Table 24. Water and Sanitation Indicators for NICASALUD Baseline Survey				
Indicator	n	Mean	95% C I	
Women (15-49yrs, not pregnant) who have acceptable source of drinking water	532	0.81	0.7804	0.8479
Women (15-49yrs, not pregnant) whose distance to water source is 20 minutes or less	532	0.38	0.3411	0.4255
Women (15-49yrs, not pregnant) who have container with top to store water	532	0.58	0.5375	0.6232
Households use a latrine or toilet as reported by women (15-49yrs, not pregnant)	532	0.76	0.7180	0.7927
Households are the only family members who use the latrine as reported by women (15-49yrs, not pregnant)	416	0.97	0.9497	0.9847
Households of women (15-49yrs, not pregnant) have clean latrine as observed by interviewer	411	0.76	0.7131	0.7980
Children's feces are disposed in sanitary mechanism as reported by women (15-49yrs, not pregnant)	525	0.61	0.5677	0.6529
Women (15-49yrs, not pregnant) whose households have soap	532	0.45	0.4079	0.4943
Women (15-49yrs, not pregnant) who know 3 or more times when handwashing is appropriate	532	0.46	0.4181	0.5047
Women's (15-49yrs, not pregnant) households dispose of trash either in a closed container, by burning it, or via truck collection	532	0.77	0.7303	0.8037

Mothers of Children 0-11 mo. Who Have Maternal Health Cards
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.54	0.3716	0.6995
CARE	114	0.62	0.5322	0.7145
CRS	38	0.35	0.1928	0.5063
HOPE	57	0.61	0.4834	0.7437
PARTNERS	38	0.53	0.3672	0.6953
PCI	57	0.53	0.3952	0.6620
PLAN	114	0.57	0.4718	0.6583
SAVE	76	0.58	0.4609	0.6892
Nicasalud	532	0.56	0.5143	0.6005

At Least One Prenatal Visit Recorded on MH Card of Mothers of 0-11 mo.
Children with MH Cards by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	20	0.69	0.4753	0.9005
CARE	69	0.93	0.8718	0.9934
CRS	13	0.64	0.3686	0.9212
HOPE	34	0.75	0.5934	0.8968
PARTNERS	20	0.77	0.5721	0.9604
PCI	30	0.80	0.6526	0.9492
PLAN	65	0.89	0.8118	0.9682
SAVE	42	0.96	0.8936	1.0204
Nicasalud	293	0.83	0.7810	0.8698

Mothers of Children 0-11 mo. Who Have Maternal Health Cards
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.57	0.5010	0.6449
Esteli/Madriz	152	0.59	0.5091	0.6693
Jinotega	190	0.53	0.4603	0.6055
Nicasalud	532	0.56	0.5143	0.6005

At Least One Prenatal Visit Recorded on MH Card of Mothers of 0-11 mo.
Children with MH Cards by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	107	0.94	0.8984	0.9882
Esteli/Madriz	89	0.85	0.7692	0.9230
Jinotega	97	0.75	0.6635	0.8399
Nicasalud	293	0.83	0.7810	0.8698

At Least One Prenatal Visit Recorded on MH Card of Mothers
with Children 0-11 mo. by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.37	0.2098	0.5270
CARE	114	0.58	0.4885	0.6742
CRS	38	0.23	0.0880	0.3628
HOPE	57	0.46	0.3240	0.5903
PARTNERS	38	0.41	0.2455	0.5686
PCI	57	0.42	0.2913	0.5554
PLAN	114	0.51	0.4124	0.6005
SAVE	76	0.56	0.4504	0.6794
Nicasalud	532	0.46	0.4198	0.5063

At Least 5 TT Vaccinations Recorded on Maternal Health Card of Mothers
with Children 0-11 mo. by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.00	0.0000	0.0000
CARE	114	0.04	0.0049	0.0813
CRS	38	0.00	0.0000	0.0000
HOPE	57	0.03	-0.0148	0.0805
PARTNERS	38	0.00	0.0000	0.0000
PCI	57	0.11	0.0273	0.1955
PLAN	114	0.08	0.0303	0.1334
SAVE	76	0.01	-0.0129	0.0316
Nicasalud	532	0.04	0.0202	0.0527

At Least One Prenatal Visit Recorded on MH Card of Mothers
with Children 0-11 mo. by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.55	0.4805	0.6252
Esteli/Madriz	152	0.50	0.4172	0.5799
Jinotega	190	0.40	0.3293	0.4719
Nicasalud	532	0.46	0.4198	0.5063

At Least 5 TT Vaccinations Recorded on Maternal Health Card of Mothers
with Children 0-11 mo. by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.02	0.0019	0.0468
Esteli/Madriz	152	0.03	0.0003	0.0524
Jinotega	190	0.05	0.0167	0.0787
Nicasalud	532	0.04	0.0202	0.0527

At Least 2 TT During Last Pregnancy (or 5 TT Vaccinations over Lifetime) Recorded on MH Card of Mothers with Children 0-11 mo. by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.05	-0.0218	0.1209
CARE	114	0.12	0.0614	0.1851
CRS	38	0.00	0.0000	0.0000
HOPE	57	0.09	0.0153	0.1705
PARTNERS	38	0.05	-0.0208	0.1261
PCI	57	0.14	0.0442	0.2273
PLAN	114	0.18	0.1057	0.2485
SAVE	76	0.11	0.0377	0.1822
Nicasalud	532	0.10	0.0714	0.1228

Mothers of Children 0-11 mo. Who Know that TT Protects Infant by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.71	0.5632	0.8609
CARE	114	0.44	0.3441	0.5307
CRS	38	0.47	0.3095	0.6379
HOPE	57	0.47	0.3408	0.6077
PARTNERS	38	0.47	0.3047	0.6328
PCI	57	0.34	0.2150	0.4685
PLAN	114	0.52	0.4225	0.6106
SAVE	76	0.47	0.3589	0.5896
Nicasalud	532	0.47	0.4314	0.5181

At Least 2 TT During Last Pregnancy (or 5 TT Vaccinations over Lifetime) Recorded on MH Card of Mothers with Children 0-11 mo. by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.12	0.0759	0.1718
Esteli/Madriz	152	0.09	0.0471	0.1420
Jinotega	190	0.09	0.0448	0.1261
Nicasalud	532	0.10	0.0714	0.1228

Mothers of Children 0-11 mo. Who Know that TT Protects Infant by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.48	0.4103	0.5557
Esteli/Madriz	152	0.54	0.4631	0.6253
Jinotega	190	0.43	0.3617	0.5058
Nicasalud	532	0.47	0.4314	0.5181

At Least 1 TT During Last Pregnancy (or 5 TT Vaccinations over Lifetime) Recorded on MH Card of Mothers with Children 0-11 mo. by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.50	0.3402	0.6690
CARE	114	0.39	0.2959	0.4792
CRS	38	0.09	-0.0039	0.1846
HOPE	57	0.33	0.2078	0.4599
PARTNERS	38	0.20	0.0659	0.3272
PCI	57	0.26	0.1422	0.3765
PLAN	114	0.34	0.2551	0.4339
SAVE	76	0.31	0.2023	0.4157
Nicasalud	532	0.32	0.2764	0.3572

Mothers of Children 0-11 mo. Who Know that TT Protects Both Mother and Infant by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.16	0.0380	0.2778
CARE	114	0.46	0.3688	0.5564
CRS	38	0.17	0.0485	0.2971
HOPE	57	0.18	0.0806	0.2879
PARTNERS	38	0.29	0.1383	0.4357
PCI	57	0.53	0.3936	0.6605
PLAN	114	0.32	0.2282	0.4031
SAVE	76	0.34	0.2278	0.4461
Nicasalud	532	0.32	0.2763	0.3571

At Least 1 TT During Last Pregnancy (or 5 TT Vaccinations over Lifetime) Recorded on MH Card of Mothers with Children 0-11 mo. by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.32	0.2487	0.3840
Esteli/Madriz	152	0.43	0.3524	0.5137
Jinotega	190	0.26	0.1918	0.3187
Nicasalud	532	0.32	0.2764	0.3572

Mothers of Children 0-11 mo. Who Know that TT Protects Both Mother and Infant by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.33	0.2640	0.4011
Esteli/Madriz	152	0.34	0.2668	0.4214
Jinotega	190	0.29	0.2282	0.3608
Nicasalud	532	0.32	0.2763	0.3571

Mothers of Infants 0-5 mo. Who Received Prenatal Care from
Clinically Trained Provider by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	21	0.95	0.8619	1.0477
CARE	58	0.90	0.8150	0.9768
CRS	23	0.69	0.4908	0.8858
HOPE	30	0.92	0.8205	1.0211
PARTNERS	21	0.87	0.7195	1.0204
PCI	21	0.94	0.8365	1.0465
PLAN	53	0.95	0.8872	1.0098
SAVE	36	0.96	0.8910	1.0259
Nicasalud	263	0.90	0.8664	0.9395

Mothers of Infants 0-5 mo. Who Received Prenatal Care from
Clinically Trained Provider by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	89	0.96	0.9127	0.9999
Esteli/Madriz	79	0.92	0.8570	0.9807
Jinotega	95	0.87	0.8005	0.9393
Nicasalud	263	0.90	0.8664	0.9395

Mother of Child 0-11 mo. Received Iron during Pregnancy
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.92	0.8254	1.0074
CARE	114	0.78	0.7048	0.8600
CRS	38	0.49	0.3282	0.6569
HOPE	57	0.51	0.3792	0.6464
PARTNERS	38	0.68	0.5314	0.8370
PCI	57	0.70	0.5761	0.8213
PLAN	114	0.85	0.7839	0.9179
SAVE	76	0.82	0.7316	0.9090
Nicasalud	532	0.71	0.6670	0.7461

Mother of Child 0-11 mo. Received Iron during Pregnancy
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.83	0.7715	0.8817
Esteli/Madriz	152	0.83	0.7740	0.8950
Jinotega	190	0.58	0.5084	0.6520
Nicasalud	532	0.71	0.6670	0.7461

Mothers of Children 0-11 mo. Who Took Anti-Malarials While Pregnant
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.16	0.1088	0.2161
Esteli/Madriz	152	0.02	-0.0017	0.0489
Jinotega	190	0.19	0.1360	0.2510
Nicasalud	532	0.14	0.1110	0.1715

Births Attended by Medically Trained Health Personnel of Mothers with Children 0-11 mo.
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.56	0.4005	0.7266
CARE	114	0.66	0.5657	0.7446
CRS	38	0.23	0.0890	0.3638
HOPE	57	0.38	0.2476	0.5067
PARTNERS	38	0.66	0.5046	0.8161
PCI	57	0.48	0.3502	0.6173
PLAN	114	0.60	0.5078	0.6921
SAVE	76	0.66	0.5555	0.7736
Nicasalud	532	0.52	0.4783	0.5650

Births Attended by Medically Trained Health Personnel of Mothers with Children 0-11 mo.
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.65	0.5819	0.7205
Esteli/Madriz	152	0.62	0.5405	0.6986
Jinotega	190	0.41	0.3352	0.4781
Nicasalud	532	0.52	0.4783	0.5650

Postnatal Care Received from Clinically Trained Health Provider
by Mothers of Children 0-5 mo. by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	21	0.66	0.4494	0.8727
CARE	58	0.67	0.5455	0.7946
CRS	22	0.22	0.0406	0.4033
HOPE	30	0.34	0.1653	0.5175
PARTNERS	20	0.71	0.5010	0.9177
PCI	21	0.62	0.3976	0.8328
PLAN	50	0.64	0.5024	0.7767
SAVE	35	0.52	0.3531	0.6956
Nicasalud	257	0.51	0.4500	0.5750

Postnatal Care Received from Clinically Trained Health Provider
by Mothers of Children 0-5 mo. by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	182	0.55	0.4401	0.6573
Esteli/Madriz	152	0.67	0.5598	0.7733
Jinotega	188	0.41	0.3068	0.5119
Nicasalud	257	0.51	0.4500	0.5750

Information about Family Planning Received by Mothers of Children 0-11 mo.
during Postnatal Visit by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	14	0.57	0.2982	0.8470
CARE	37	0.78	0.6392	0.9164
CRS	4	0.75	0.2500	1.2500
HOPE	14	0.30	0.0452	0.5531
PARTNERS	14	0.64	0.3749	0.9071
PCI	12	0.62	0.3233	0.9097
PLAN	30	0.71	0.5392	0.8769
SAVE	21	0.69	0.4816	0.8958
Nicasalud	146	0.62	0.5421	0.7031

Information about Family Planning Received by Mothers of Children 0-11 mo.
during Postnatal Visit by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	51	0.69	0.5631	0.8239
Esteli/Madriz	51	0.70	0.5687	0.8283
Jinotega	44	0.51	0.3574	0.6624
Nicasalud	146	0.62	0.5421	0.7031

Men (15-49yrs) Who Know Closest Place for Woman to Deliver Baby
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.98	0.9241	1.0263
CARE	113	0.90	0.8450	0.9577
CRS	38	0.81	0.6839	0.9407
HOPE	57	0.91	0.8353	0.9873
PARTNERS	38	0.93	0.8437	1.0132
PCI	57	0.96	0.9132	1.0136
PLAN	104	0.91	0.8533	0.9662
SAVE	74	0.85	0.7711	0.9365
Nicasalud	519	0.91	0.8793	0.9308

Men (15-49yrs) Who Know Closest Place for Woman to Deliver Baby
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.86	0.8135	0.9162
Esteli/Madriz	151	0.93	0.8888	0.9719
Jinotega	190	0.91	0.8690	0.9521
Nicasalud	519	0.91	0.8793	0.9308

Men (15-49yrs) Who Know 2 or More Danger Signs during Pregnancy
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.05	-0.0218	0.1209
CARE	114	0.05	0.0078	0.0882
CRS	38	0.07	-0.0150	0.1501
HOPE	57	0.16	0.0617	0.2575
PARTNERS	38	0.05	-0.0208	0.1261
PCI	57	0.11	0.0273	0.1955
PLAN	104	0.10	0.0441	0.1645
SAVE	74	0.12	0.0446	0.1972
Nicasalud	520	0.10	0.0736	0.1263

Men (15-49yrs) Who Know 2 or More Danger Signs during Pregnancy
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.12	0.0692	0.1660
Esteli/Madriz	152	0.05	0.0136	0.0836
Jinotega	190	0.12	0.0719	0.1661
Nicasalud	520	0.10	0.0736	0.1263

Men (15-49yrs) Who Know 2 or More Danger Signs during Delivery
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.19	0.0579	0.3136
CARE	114	0.10	0.0406	0.1515
CRS	38	0.02	-0.0259	0.0636
HOPE	57	0.08	0.0074	0.1522
PARTNERS	38	0.08	-0.0085	0.1713
PCI	57	0.12	0.0299	0.2006
PLAN	104	0.23	0.1445	0.3096
SAVE	74	0.15	0.0650	0.2313
Nicasalud	520	0.11	0.0851	0.1407

Men (15-49yrs) Who Know 2 or More Danger Signs during Delivery
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.16	0.1081	0.2194
Esteli/Madriz	152	0.13	0.0760	0.1858
Jinotega	190	0.08	0.0402	0.1190
Nicasalud	520	0.11	0.0851	0.1407

Men (15-49yrs) Who Know 2 or More Danger Signs after Delivery
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.23	0.0934	0.3711
CARE	114	0.13	0.0700	0.1982
CRS	38	0.07	-0.0132	0.1562
HOPE	57	0.14	0.0442	0.2272
PARTNERS	38	0.05	-0.0208	0.1261
PCI	57	0.17	0.0726	0.2752
PLAN	104	0.17	0.0989	0.2482
SAVE	74	0.29	0.1824	0.3945
Nicasalud	520	0.17	0.1389	0.2052

Men (15-49yrs) Who Know 2 or More Danger Signs after Delivery
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.27	0.1993	0.3321
Esteli/Madriz	152	0.17	0.1108	0.2337
Jinotega	190	0.13	0.0796	0.1769
Nicasalud	520	0.17	0.1389	0.2052

Men (15-49yrs) Who Know Maternal Complications: 2 or More Danger Signs during Pregnancy, Delivery and after Delivery by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.00	0.0000	0.0000
CARE	114	0.02	-0.0053	0.0508
CRS	38	0.00	0.0000	0.0000
HOPE	57	0.00	0.0000	0.0000
PARTNERS	38	0.00	0.0000	0.0000
PCI	57	0.05	-0.0070	0.1123
PLAN	104	0.03	-0.0017	0.0699
SAVE	74	0.06	0.0051	0.1173
Nicasalud	520	0.02	0.0110	0.0383

Men (15-49yrs) Who Know Maternal Complications: 2 or More Danger Signs during Pregnancy, Delivery and after Delivery by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.06	0.0213	0.0903
Esteli/Madriz	152	0.01	-0.0052	0.0329
Jinotega	190	0.02	-0.0023	0.0340
Nicasalud	520	0.02	0.0110	0.0383

Men (15-49yrs) Who Know Where to Take Woman during Maternal Complications by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	1.00	1.0000	1.0000
CARE	114	0.88	0.8248	0.9449
CRS	38	0.91	0.8154	1.0039
HOPE	57	0.95	0.8877	1.0070
PARTNERS	38	0.85	0.7287	0.9654
PCI	57	0.96	0.9069	1.0122
PLAN	104	0.96	0.9174	0.9971
SAVE	74	0.97	0.9267	1.0092
Nicasalud	520	0.94	0.9203	0.9617

Men (15-49yrs) Who Know Where to Take Woman during Maternal Complications by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.97	0.9385	0.9931
Esteli/Madriz	152	0.93	0.8880	0.9713
Jinotega	190	0.94	0.8996	0.9712
Nicasalud	520	0.94	0.9203	0.9617

Women (15-49yrs, Not Pregnant) Who Know Closest Place for Woman to Deliver Baby by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.95	0.8739	1.0208
CARE	114	0.89	0.8357	0.9517
CRS	38	0.86	0.7419	0.9721
HOPE	57	0.83	0.7274	0.9290
PARTNERS	38	0.88	0.7674	0.9843
PCI	57	0.95	0.8877	1.0070
PLAN	111	0.95	0.9020	0.9887
SAVE	76	1.00	1.0000	1.0000
Nicasalud	529	0.91	0.8873	0.9367

Women (15-49yrs, Not Pregnant) Who Know Closest Place for Woman to Deliver Baby by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	187	0.99	0.9736	1.0043
Esteli/Madriz	152	0.91	0.8691	0.9601
Jinotega	190	0.87	0.8251	0.9219
Nicasalud	529	0.91	0.8873	0.9367

Women (15-49yrs, Not Pregnant) Know 2 or More Danger Signs during Pregnancy by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.21	0.0741	0.3408
CARE	114	0.15	0.0793	0.2121
CRS	38	0.02	-0.0259	0.0636
HOPE	57	0.21	0.0989	0.3156
PARTNERS	38	0.20	0.0690	0.3323
PCI	57	0.33	0.2020	0.4528
PLAN	114	0.23	0.1538	0.3130
SAVE	76	0.29	0.1843	0.3937
Nicasalud	532	0.21	0.1793	0.2506

Women (15-49yrs, Not Pregnant) Know 2 or More Danger Signs during Pregnancy by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.28	0.2123	0.3426
Esteli/Madriz	152	0.17	0.1086	0.2308
Jinotega	190	0.21	0.1496	0.2679
Nicasalud	532	0.21	0.1793	0.2506

Women (15-49yrs, Not Pregnant) Who Know 2 or More Danger Signs during Delivery by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.21	0.0765	0.3446
CARE	114	0.21	0.1367	0.2910
CRS	38	0.09	-0.0060	0.1788
HOPE	57	0.06	-0.0027	0.1258
PARTNERS	38	0.16	0.0414	0.2842
PCI	57	0.27	0.1507	0.3879
PLAN	114	0.18	0.1114	0.2573
SAVE	76	0.24	0.1435	0.3414
Nicasalud	532	0.18	0.1463	0.2130

Women (15-49yrs, Not Pregnant) Who Know 2 or More Danger Signs during Delivery by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.23	0.1691	0.2917
Esteli/Madriz	152	0.21	0.1460	0.2791
Jinotega	190	0.14	0.0874	0.1876
Nicasalud	532	0.18	0.1463	0.2130

Women (15-49yrs, Not Pregnant) Who Know 2 or More Danger Signs after Delivery by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.23	0.0934	0.3711
CARE	114	0.25	0.1643	0.3262
CRS	38	0.16	0.0380	0.2778
HOPE	57	0.23	0.1185	0.3439
PARTNERS	38	0.15	0.0346	0.2713
PCI	57	0.36	0.2277	0.4836
PLAN	114	0.27	0.1837	0.3502
SAVE	76	0.29	0.1849	0.3944
Nicasalud	532	0.26	0.2173	0.2929

Women (15-49yrs, Not Pregnant) Who Know 2 or More Danger Signs after Delivery by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.28	0.2193	0.3506
Esteli/Madriz	152	0.24	0.1707	0.3097
Jinotega	190	0.25	0.1857	0.3114
Nicasalud	532	0.26	0.2173	0.2929

Women (15-49yrs, Not Pregnant) Who Know Maternal Complications: 2 or More Danger Signs during Pregnancy, Delivery and after Delivery by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.05	-0.0218	0.1209
CARE	114	0.03	0.0001	0.0686
CRS	38	0.00	0.0000	0.0000
HOPE	57	0.04	-0.0138	0.0860
PARTNERS	38	0.00	0.0000	0.0000
PCI	57	0.14	0.0481	0.2343
PLAN	114	0.14	0.0744	0.2049
SAVE	76	0.09	0.0212	0.1507
Nicasalud	532	0.06	0.0417	0.0838

Women (15-49yrs, Not Pregnant) Who Know Maternal Complications: 2 or More Danger Signs during Pregnancy, Delivery and after Delivery by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.10	0.0540	0.1401
Esteli/Madriz	152	0.04	0.0083	0.0723
Jinotega	190	0.06	0.0240	0.0921
Nicasalud	532	0.06	0.0417	0.0838

Women (15-49yrs, Not Pregnant) Know Where to Take Woman during Maternal Complications by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	1.00	1.0000	1.0000
CARE	114	0.97	0.9419	1.0033
CRS	38	0.85	0.7274	0.9647
HOPE	57	1.00	1.0000	1.0000
PARTNERS	38	0.97	0.9162	1.0262
PCI	57	1.00	1.0000	1.0000
PLAN	114	0.94	0.8901	0.9821
SAVE	76	0.99	0.9604	1.0132
Nicasalud	532	0.97	0.9612	0.9884

Women (15-49yrs, Not Pregnant) Know Where to Take Woman during Maternal Complications by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.98	0.9541	0.9984
Esteli/Madriz	152	0.98	0.9624	1.0041
Jinotega	190	0.97	0.9446	0.9946
Nicasalud	532	0.97	0.9612	0.9884

Newborns Placed with Mother Immediately after Delivery as Reported by Mother of Children 0-11 mo. by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.48	0.3156	0.6441
CARE	114	0.79	0.7154	0.8682
CRS	38	0.63	0.4687	0.7866
HOPE	57	0.54	0.4070	0.6734
PARTNERS	38	0.53	0.3621	0.6905
PCI	57	0.45	0.3208	0.5869
PLAN	114	0.52	0.4222	0.6103
SAVE	76	0.45	0.3328	0.5625
Nicasalud	532	0.55	0.5069	0.5932

Mothers Report Cord Clean after First Week of Delivery of Child 0-11 mo. by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.73	0.5884	0.8791
CARE	114	0.83	0.7568	0.8989
CRS	38	0.58	0.4166	0.7413
HOPE	57	0.61	0.4753	0.7365
PARTNERS	38	0.88	0.7674	0.9843
PCI	57	0.85	0.7543	0.9452
PLAN	114	0.92	0.8697	0.9714
SAVE	76	0.91	0.8480	0.9781
Nicasalud	532	0.77	0.7385	0.8110

Newborns Placed with Mother Immediately after Delivery as Reported by Mother of Children 0-11 mo. by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.46	0.3893	0.5344
Esteli/Madriz	152	0.67	0.5940	0.7470
Jinotega	190	0.53	0.4562	0.6014
Nicasalud	532	0.55	0.5069	0.5932

Mothers Report Cord Clean after First Week of Delivery of Child 0-11 mo. by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.91	0.8740	0.9553
Esteli/Madriz	152	0.79	0.7251	0.8574
Jinotega	190	0.70	0.6314	0.7650
Nicasalud	532	0.77	0.7385	0.8110

Mother of Child 0-11 mo. Knows to Take Sick Child for Immunizations
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.94	0.8689	1.0197
CARE	114	0.92	0.8721	0.9727
CRS	38	0.68	0.5269	0.8336
HOPE	57	0.80	0.6982	0.9103
PARTNERS	38	0.90	0.8080	1.0012
PCI	57	0.95	0.8877	1.0070
PLAN	111	0.95	0.9078	0.9913
SAVE	73	0.88	0.8065	0.9584
Nicasalud	526	0.87	0.8453	0.9032

Mother of Child 0-11 mo. Knows to Take Sick Child for Immunizations
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	184	0.90	0.8515	0.9416
Esteli/Madriz	152	0.93	0.8897	0.9722
Jinotega	190	0.83	0.7796	0.8879
Nicasalud	526	0.87	0.8453	0.9032

Mother of Child 2-11 mo. Received VitA within First 2 Months
after Delivery by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	33	0.27	0.1155	0.4306
CARE	95	0.24	0.1541	0.3309
CRS	32	0.15	0.0187	0.2719
HOPE	48	0.24	0.1124	0.3602
PARTNERS	35	0.32	0.1581	0.4775
PCI	53	0.35	0.2142	0.4781
PLAN	100	0.47	0.3666	0.5672
SAVE	66	0.32	0.2058	0.4375
Nicasalud	462	0.28	0.2405	0.3243

Mother of Child 2-11 mo. Received VitA within First 2 Months
after Delivery by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	166	0.35	0.2776	0.4263
Esteli/Madriz	128	0.25	0.1774	0.3320
Jinotega	168	0.26	0.1947	0.3310
Nicasalud	462	0.28	0.2405	0.3243

Women (15-49yrs, Not Pregnant) Know 2 or More Signs of Sick Newborn
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.14	0.0254	0.2531
CARE	114	0.14	0.0726	0.2021
CRS	38	0.11	0.0044	0.2062
HOPE	57	0.14	0.0489	0.2356
PARTNERS	38	0.22	0.0841	0.3567
PCI	57	0.32	0.1984	0.4485
PLAN	114	0.35	0.2620	0.4417
SAVE	76	0.37	0.2577	0.4806
Nicasalud	532	0.22	0.1860	0.2581

Women (15-49yrs, Not Pregnant) Know 2 or More Signs of Sick Newborn
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.37	0.2955	0.4356
Esteli/Madriz	152	0.14	0.0819	0.1942
Jinotega	190	0.20	0.1391	0.2549
Nicasalud	532	0.22	0.1860	0.2581

Newborn Received Care from Clinically Trained Health Provider
as Reported by Mother of Child 0-5 mo. by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	21	0.75	0.5582	0.9447
CARE	58	0.81	0.7078	0.9150
CRS	23	0.42	0.2089	0.6297
HOPE	30	0.77	0.6113	0.9248
PARTNERS	21	0.81	0.6328	0.9846
PCI	21	0.71	0.5091	0.9143
PLAN	53	0.80	0.6881	0.9103
SAVE	36	0.59	0.4219	0.7546
Nicasalud	263	0.70	0.6447	0.7578

Newborn Received Care from Clinically Trained Health Provider
as Reported by Mother of Child 0-5 mo. by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	89	0.63	0.5309	0.7364
Esteli/Madriz	79	0.79	0.6955	0.8806
Jinotega	95	0.68	0.5875	0.7794
Nicasalud	263	0.70	0.6447	0.7578

Comparing the Difference Between Care for Mothers and Newborns

Either NonClinical or Clnical

		Newborn Care		
		Non Clinic	Clinic	
Mother's Postnatal Care	Non Clinic	57.5	42.5	100
	Clinic	13.47	86.53	100

Instrument Used to Cut Cord as Reported by Mothers of 0-11 mo. Children
Who Did Not Deliver at a Health Facility or by a Medically Trained Health Provider

	Frequency	Percent	Note: Data are Weighted
Razorblade	87	41.86	
Scissors	75	29.21	
Knife	9	4.27	
Don't Know	38	16.8	
Other	18	7.87	
Total	227	100.01	

Men (15-49yrs) Who Have Heard of HIV/AIDS
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.98	0.9241	1.0263
CARE	114	0.96	0.9204	0.9958
CRS	38	0.85	0.7274	0.9647
HOPE	57	0.99	0.9529	1.0175
PARTNERS	38	0.92	0.8287	1.0085
PCI	57	0.93	0.8638	0.9989
PLAN	104	0.92	0.8638	0.9720
SAVE	74	0.95	0.8977	1.0006
Nicasalud	520	0.95	0.9264	0.9660

Men (15-49yrs) Who Have Heard of HIV/AIDS
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.94	0.9081	0.9778
Esteli/Madriz	152	0.96	0.9348	0.9948
Jinotega	190	0.94	0.9028	0.9730
Nicasalud	520	0.95	0.9264	0.9660

Men (15-49yrs) Who Know 2 or More Ways to Prevent Transmission
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.63	0.4763	0.7930
CARE	114	0.49	0.3938	0.5819
CRS	38	0.10	0.0021	0.2005
HOPE	57	0.41	0.2826	0.5459
PARTNERS	38	0.21	0.0611	0.3600
PCI	57	0.43	0.2993	0.5641
PLAN	104	0.44	0.3451	0.5409
SAVE	74	0.43	0.3161	0.5481
Nicasalud	520	0.42	0.3757	0.4623

Men (15-49yrs) Who Know 2 or More Ways to Prevent Transmission
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.43	0.3597	0.5088
Esteli/Madriz	152	0.54	0.4639	0.6260
Jinotega	190	0.34	0.2758	0.4141
Nicasalud	520	0.42	0.3757	0.4623

Men (15-49yrs) Who Know HIV Can Be Transmitted during Pregnancy
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.87	0.7594	0.9806
CARE	114	0.73	0.6465	0.8135
CRS	38	0.57	0.4083	0.7338
HOPE	57	0.80	0.6971	0.9096
PARTNERS	38	0.75	0.6096	0.8937
PCI	57	0.79	0.6761	0.8954
PLAN	104	0.79	0.7137	0.8732
SAVE	74	0.84	0.7593	0.9291
Nicasalud	520	0.78	0.7431	0.8159

Men (15-49yrs) Who Know HIV Can Be Transmitted during Pregnancy
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.83	0.7782	0.8901
Esteli/Madriz	152	0.78	0.7175	0.8513
Jinotega	190	0.75	0.6886	0.8143
Nicasalud	520	0.78	0.7431	0.8159

Men (15-49yrs) Who Know HIV Can Be Transmitted during Delivery
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.79	0.6592	0.9259
CARE	114	0.57	0.4792	0.6654
CRS	38	0.33	0.1725	0.4810
HOPE	57	0.65	0.5221	0.7771
PARTNERS	38	0.64	0.4838	0.7991
PCI	57	0.67	0.5400	0.7921
PLAN	104	0.61	0.5174	0.7094
SAVE	74	0.63	0.5151	0.7413
Nicasalud	520	0.62	0.5764	0.6616

Men (15-49yrs) Who Know HIV Can Be Transmitted during Delivery
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.63	0.5525	0.6980
Esteli/Madriz	152	0.66	0.5807	0.7352
Jinotega	190	0.60	0.5240	0.6668
Nicasalud	520	0.62	0.5764	0.6616

Men (15-49yrs) Who Know HIV Can Be Transmitted during Breastfeeding
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.76	0.6252	0.9042
CARE	114	0.59	0.4978	0.6828
CRS	38	0.49	0.3242	0.6530
HOPE	57	0.82	0.7230	0.9263
PARTNERS	38	0.62	0.4578	0.7774
PCI	57	0.70	0.5787	0.8234
PLAN	104	0.64	0.5424	0.7319
SAVE	74	0.77	0.6733	0.8699
Nicasalud	520	0.70	0.6634	0.7436

Men (15-49yrs) Who Know HIV Can Be Transmitted during Breastfeeding
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.74	0.6795	0.8105
Esteli/Madriz	152	0.66	0.5809	0.7353
Jinotega	190	0.71	0.6422	0.7745
Nicasalud	520	0.70	0.6634	0.7436

Men (15-49yrs) Know Methods of HIV/AIDS Prevention
by Prevention Method in Nicasalud

	Freq.	Percent	
			Note: This questions allowed for multiple responses;
Use condoms	366	0.70	*The total is greater than 532.*
Have one faithful sexual partner	158	0.30	
Avoid sex with prostitutes	132	0.25	
Limit the numBer of sexual partners	67	0.13	
Avoid sex with people Who have many partners	36	0.07	
Abstain	34	0.07	
Avoid injections	19	0.04	
Avoid blood transfusions	17	0.03	
Avoid sharing razors	13	0.03	
Avoid sex with homosexuals	10	0.02	
Avoid sex with people Who use IV drugs	7	0.01	
Avoid kissing	3	0.01	
Seek protection from healer	1	0.00	
Other	17	0.03	
Never heard of HIV/AIDS	33	0.06	
Total	913	1.75	

Women (15-49yrs, Not Pregnant) Who Have Heard of HIV/AIDS by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.92	0.8301	1.0090
CARE	114	0.94	0.8894	0.9818
CRS	38	0.79	0.6554	0.9235
HOPE	57	0.78	0.6717	0.8924
PARTNERS	38	0.97	0.9162	1.0262
PCI	57	0.87	0.7835	0.9617
PLAN	114	0.92	0.8746	0.9741
SAVE	76	0.89	0.8240	0.9657
Nicasalud	532	0.87	0.8429	0.9009

Women (15-49yrs, Not Pregnant) Who Have Heard of HIV/AIDS by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.90	0.8575	0.9444
Esteli/Madriz	152	0.93	0.8876	0.9711
Jinotega	190	0.83	0.7723	0.8823
Nicasalud	532	0.87	0.8429	0.9009

Women (15-49yrs, Not Pregnant) Who Know 2 or More Ways to Prevent HIV Transmission by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.28	0.1365	0.4333
CARE	114	0.35	0.2601	0.4395
CRS	38	0.14	0.0253	0.2528
HOPE	57	0.23	0.1212	0.3477
PARTNERS	38	0.27	0.1218	0.4128
PCI	57	0.30	0.1753	0.4197
PLAN	114	0.45	0.3555	0.5427
SAVE	76	0.39	0.2732	0.4980
Nicasalud	532	0.30	0.2602	0.3398

Women (15-49yrs, Not Pregnant) Who Know 2 or More Ways to Prevent HIV Transmission by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.40	0.3275	0.4700
Esteli/Madriz	152	0.32	0.2483	0.4007
Jinotega	190	0.24	0.1770	0.3011
Nicasalud	532	0.30	0.2602	0.3398

Women (15-49yrs, Not Pregnant) Who Know HIV Can Be Transmitted during Pregnancy by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.79	0.6554	0.9235
CARE	114	0.77	0.6859	0.8453
CRS	37	0.37	0.2104	0.5326
HOPE	57	0.60	0.4737	0.7351
PARTNERS	38	0.82	0.6915	0.9451
PCI	57	0.78	0.6661	0.8885
PLAN	113	0.75	0.6653	0.8295
SAVE	76	0.79	0.7005	0.8873
Nicasalud	530	0.71	0.6678	0.7470

Women (15-49yrs, Not Pregnant) Who Know HIV Can Be Transmitted during Pregnancy by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	189	0.78	0.7244	0.8443
Esteli/Madriz	152	0.77	0.7069	0.8429
Jinotega	189	0.63	0.5637	0.7043
Nicasalud	530	0.71	0.6678	0.7470

Women (15-49yrs, Not Pregnant) Who Know HIV Can Be Transmitted during Delivery by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.73	0.5961	0.8715
CARE	106	0.58	0.4862	0.6807
CRS	37	0.21	0.0462	0.3830
HOPE	57	0.48	0.3263	0.6241
PARTNERS	38	0.58	0.4207	0.7471
PCI	57	0.69	0.5714	0.8047
PLAN	104	0.65	0.5598	0.7468
SAVE	74	0.54	0.4193	0.6600
Nicasalud	511	0.55	0.5084	0.5983

Women (15-49yrs, Not Pregnant) Who Know HIV Can Be Transmitted during Delivery by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.56	0.4874	0.6366
Esteli/Madriz	144	0.64	0.5645	0.7246
Jinotega	189	0.50	0.4297	0.5756
Nicasalud	511	0.55	0.5084	0.5983

Women (15-49yrs, Not Pregnant) Who Know HIV Can Be Transmitted during Breastfeeding
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.76	0.6178	0.8993
CARE	106	0.59	0.4902	0.6824
CRS	38	0.37	0.2098	0.5270
HOPE	57	0.57	0.4375	0.7021
PARTNERS	38	0.63	0.4730	0.7902
PCI	57	0.71	0.5915	0.8335
PLAN	105	0.71	0.6178	0.7963
SAVE	74	0.60	0.4827	0.7123
Nicasalud	513	0.61	0.5667	0.6529

Women (15-49yrs, Not Pregnant) Who Know HIV Can Be Transmitted during Breastfeeding
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	179	0.62	0.5464	0.6920
Esteli/Madriz	144	0.66	0.5769	0.7358
Jinotega	190	0.58	0.5100	0.6535
Nicasalud	513	0.61	0.5667	0.6529

Women (15-49yrs, Not Pregnant) Know Methods of HIV/AIDS prevention
by Prevention Method in Nicasalud

	n	MEAN	
Use condoms	256	0.48	*The total is greater than 532.*
Have a faithful sexual partner	103	0.19	
Avoid sex with prostitutes	90	0.17	
Avoid having many sexual partners	67	0.13	
Abstain	60	0.11	
Avoid blood transfusions	24	0.05	
Avoid sharing razors	12	0.02	
Avoid kissing	10	0.02	
Avoid IV drugs	7	0.01	
Avoid mosquito bites	1	0.00	
Other	39	0.07	
Never heard of HIV/AIDS	54	0.10	
Total	723	1.36	

Men (15-49yrs) Know of Sexually Transmitted Infections Other than HIV/AIDS by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.71	0.6283	0.7835
CARE	114	0.77	0.6710	0.8677
CRS	38	0.61	0.4489	0.7765
HOPE	57	0.84	0.7023	0.9770
PARTNERS	38	0.64	0.4777	0.8052
PCI	57	0.80	0.6990	0.8998
PLAN	104	0.76	0.6731	0.8439
SAVE	75	0.78	0.6603	0.8934
Nicasalud	521	0.76	0.7222	0.8049

Men (15-49yrs) Know of Sexually Transmitted Infections Other than HIV/AIDS by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	179	0.77	0.7103	0.8362
Esteli/Madriz	152	0.74	0.6737	0.8157
Jinotega	190	0.77	0.7077	0.8303
Nicasalud	521	0.76	0.7222	0.8049

Men (15-49yrs) Know 2 or More STI Signs/Symptoms in Men by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.34	0.1847	0.4964
CARE	114	0.33	0.2374	0.4137
CRS	38	0.14	0.0253	0.2528
HOPE	57	0.29	0.1675	0.4097
PARTNERS	38	0.16	0.0380	0.2778
PCI	57	0.43	0.2993	0.5641
PLAN	104	0.34	0.2500	0.4372
SAVE	74	0.43	0.3146	0.5465
Nicasalud	520	0.33	0.2900	0.3727

Men (15-49yrs) Know 2 or More STI Signs/Symptoms in Men by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.41	0.3393	0.4874
Esteli/Madriz	152	0.33	0.2548	0.4080
Jinotega	190	0.29	0.2269	0.3594
Nicasalud	520	0.33	0.2900	0.3727

Men (15-49yrs) Know 2 or More STI Signs/Sympoms in Women by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.13	0.0175	0.2364
CARE	114	0.11	0.0492	0.1658
CRS	38	0.02	-0.0259	0.0636
HOPE	57	0.13	0.0377	0.2154
PARTNERS	38	0.11	0.0044	0.2062
PCI	57	0.16	0.0651	0.2630
PLAN	104	0.20	0.1173	0.2736
SAVE	74	0.12	0.0464	0.2003
Nicasalud	520	0.12	0.0924	0.1497

Men (15-49yrs) Know 2 or More STI Signs/Sympoms in Women by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.14	0.0858	0.1894
Esteli/Madriz	152	0.12	0.0631	0.1670
Jinotega	190	0.12	0.0698	0.1631
Nicasalud	520	0.12	0.0924	0.1497

Men (15-49yrs) Report Using a Condom Each Time
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.18	0.0534	0.3058
CARE	107	0.22	0.1362	0.2961
CRS	25	0.14	-0.0023	0.2801
HOPE	47	0.15	0.0432	0.2526
PARTNERS	30	0.16	0.0248	0.2982
PCI	53	0.17	0.0689	0.2793
PLAN	101	0.14	0.0726	0.2124
SAVE	59	0.31	0.1854	0.4275
Nicasalud	460	0.20	0.1582	0.2322

Men (15-49yrs) Report Using a Condom Each Time
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	160	0.27	0.1989	0.3396
Esteli/Madriz	145	0.20	0.1345	0.2682
Jinotega	155	0.16	0.0980	0.2151
Nicasalud	460	0.20	0.1582	0.2322

Men (15-49yrs) Know Where to Get Condoms
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	35	0.95	0.8684	1.0235
CARE	103	0.56	0.4601	0.6567
CRS	33	0.69	0.5240	0.8517
HOPE	48	0.67	0.5277	0.8025
PARTNERS	31	0.72	0.5576	0.8850
PCI	54	0.84	0.7408	0.9416
PLAN	102	0.76	0.6711	0.8419
SAVE	61	0.72	0.5987	0.8317
Nicasalud	467	0.73	0.6841	0.7668

Men (15-49yrs) Know Where to Get Condoms
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	163	0.72	0.6540	0.7944
Esteli/Madriz	138	0.71	0.6322	0.7873
Jinotega	166	0.74	0.6665	0.8039
Nicasalud	467	0.73	0.6841	0.7668

Men (15-49yrs) Report Using a Condom in Most Previous Sexual Contact
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.24	0.0983	0.3785
CARE	108	0.18	0.1054	0.2539
CRS	25	0.14	-0.0023	0.2801
HOPE	47	0.14	0.0372	0.2414
PARTNERS	29	0.21	0.0580	0.3673
PCI	51	0.20	0.0889	0.3162
PLAN	99	0.13	0.0632	0.1997
SAVE	64	0.30	0.1834	0.4141
Nicasalud	461	0.20	0.1627	0.2373

Men (15-49yrs) Report Using a Condom in Most Previous Sexual Contact
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	163	0.26	0.1946	0.3331
Esteli/Madriz	146	0.20	0.1364	0.2701
Jinotega	152	0.17	0.1053	0.2264
Nicasalud	461	0.20	0.1627	0.2373

Women (15-49yrs, Not Pregnant) Know of Sexually Transmitted Infections Other than HIV/AIDS by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.52	0.3590	0.6875
CARE	114	0.61	0.5174	0.7010
CRS	38	0.61	0.4526	0.7729
HOPE	57	0.72	0.6053	0.8441
PARTNERS	38	0.55	0.3866	0.7137
PCI	57	0.54	0.4053	0.6717
PLAN	114	0.55	0.4593	0.6464
SAVE	76	0.53	0.4194	0.6498
Nicasalud	532	0.60	0.5525	0.6377

Women (15-49yrs, Not Pregnant) Know of Sexually Transmitted Infections Other than HIV/AIDS by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.54	0.4658	0.4658
Esteli/Madriz	152	0.58	0.4954	0.4954
Jinotega	190	0.63	0.5629	0.5629
Nicasalud	532	0.60	0.5525	0.6377

Women (15-49yrs, Not Pregnant) Know 2 or More STI Signs/Symptoms in Men by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.06	-0.0197	0.1311
CARE	114	0.16	0.0877	0.2242
CRS	38	0.00	0.0000	0.0000
HOPE	57	0.09	0.0164	0.1728
PARTNERS	38	0.08	-0.0085	0.1713
PCI	57	0.10	0.0193	0.1790
PLAN	114	0.22	0.1450	0.3017
SAVE	76	0.14	0.0610	0.2219
Nicasalud	532	0.11	0.0806	0.1343

Women (15-49yrs, Not Pregnant) Know 2 or More STI Signs/Symptoms in Men by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.16	0.1053	0.2115
Esteli/Madriz	152	0.12	0.0647	0.1693
Jinotega	190	0.08	0.0387	0.1166
Nicasalud	532	0.11	0.0806	0.1343

Women (15-49yrs, Not Pregnant) Know 2 or More STI Signs/Sympoms in Women by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.16	0.0401	0.2818
CARE	114	0.21	0.1335	0.2868
CRS	38	0.05	-0.0208	0.1261
HOPE	57	0.07	0.0004	0.1345
PARTNERS	38	0.08	-0.0085	0.1713
PCI	57	0.13	0.0426	0.2243
PLAN	114	0.22	0.1442	0.3007
SAVE	76	0.19	0.0972	0.2774
Nicasalud	532	0.14	0.1096	0.1698

Women (15-49yrs, Not Pregnant) Know 2 or More STI Signs/Sympoms in Women by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.19	0.1370	0.2522
Esteli/Madriz	152	0.19	0.1270	0.2550
Jinotega	190	0.09	0.0451	0.1266
Nicasalud	532	0.14	0.1096	0.1698

Women (15-49yrs, Not Pregnant) Report Using a Condom Each Time
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.08	-0.0090	0.1699
CARE	98	0.02	-0.0070	0.0554
CRS	17	0.04	-0.0586	0.1473
HOPE	31	0.09	-0.0162	0.1890
PARTNERS	31	0.17	0.0327	0.3070
PCI	33	0.07	-0.0218	0.1538
PLAN	85	0.02	-0.0102	0.0528
SAVE	51	0.03	-0.0187	0.0740
Nicasalud	384	0.06	0.0332	0.0806

Women (15-49yrs, Not Pregnant) Report Using a Condom Each Time
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	136	0.03	-0.0013	0.0537
Esteli/Madriz	136	0.05	0.0113	0.0851
Jinotega	112	0.09	0.0322	0.1382
Nicasalud	384	0.06	0.0332	0.0806

Women (15-49yrs, Not Pregnant) Report Using a Condom in
Most Previous Sexual Contact by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	20	0.00	0.0000	0.0000
CARE	72	0.02	-0.0135	0.0498
CRS	21	0.00	0.0000	0.0000
HOPE	39	0.06	-0.0181	0.1328
PARTNERS	22	0.18	0.0155	0.3544
PCI	38	0.00	0.0000	0.0000
PLAN	75	0.03	-0.0105	0.0658
SAVE	44	0.05	-0.0149	0.1229
Nicasalud	331	0.03	0.0147	0.0551

Women (15-49yrs, Not Pregnant) Report Using a Condom in
Most Previous Sexual Contact by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	119	0.05	0.0081	0.0862
Esteli/Madriz	92	0.01	-0.0108	0.0347
Jinotega	120	0.04	0.0044	0.0768
Nicasalud	331	0.03	0.0147	0.0551

Women (15-49yrs, Not Pregnant) Know Where to Get Condoms
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.89	0.7938	0.9956
CARE	111	0.79	0.7096	0.8656
CRS	36	0.51	0.3387	0.6768
HOPE	56	0.64	0.5121	0.7707
PARTNERS	38	0.59	0.4270	0.7506
PCI	53	0.80	0.6875	0.9099
PLAN	100	0.67	0.5760	0.7650
SAVE	69	0.82	0.7210	0.9093
Nicasalud	501	0.73	0.6947	0.7737

Women (15-49yrs, Not Pregnant) Know Where to Get Condoms
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	169	0.79	0.7223	0.8490
Esteli/Madriz	149	0.83	0.7682	0.8917
Jinotega	183	0.66	0.5882	0.7288
Nicasalud	501	0.73	0.6947	0.7737

Men (15-49yrs) Currently Using a Contraceptive Method
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.42	0.2558	0.5801
CARE	114	0.44	0.3461	0.5329
CRS	38	0.42	0.2587	0.5834
HOPE	57	0.43	0.2953	0.5598
PARTNERS	38	0.43	0.2681	0.5937
PCI	57	0.50	0.3629	0.6302
PLAN	104	0.44	0.3433	0.5390
SAVE	74	0.38	0.2637	0.4906
Nicasalud	520	0.43	0.3862	0.4731

Men (15-49yrs) Currently Using a Contraceptive Method
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.39	0.3165	0.4631
Esteli/Madriz	152	0.43	0.3505	0.5117
Jinotega	190	0.45	0.3751	0.5198
Nicasalud	520	0.43	0.3862	0.4731

Family Planning: Men
Men (15-49yrs) currently using a contraceptive Method: Stratified by method

	Frequency	Percent	Cum.
No Method	300	0.57	0.570
Pill	75	0.14	0.715
Injection	53	0.09	0.808
Sterilization	51	0.10	0.910
Barrier	24	0.05	0.963
IUD	12	0.03	0.991
Other	3	0.00	0.994
Abstain	1	0.00	0.994
Rhythm	1	0.00	0.997
note: data weighted	520	1.00	

Men (15-49yrs) Currently Using a Modern Contraceptive Method
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.42	0.2558	0.5801
CARE	114	0.44	0.3461	0.5329
CRS	38	0.42	0.2587	0.5834
HOPE	57	0.43	0.2953	0.5598
PARTNERS	38	0.43	0.2681	0.5937
PCI	57	0.46	0.3230	0.5892
PLAN	104	0.43	0.3329	0.5280
SAVE	74	0.38	0.2637	0.4906
Nicasalud	520	0.42	0.3797	0.4664

Men (15-49yrs) Currently Using a Modern Contraceptive Method
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.39	0.3145	0.4610
Esteli/Madriz	152	0.43	0.3505	0.5117
Jinotega	190	0.44	0.3631	0.5074
Nicasalud	520	0.42	0.3797	0.4664

Family Planning: Women
Women (15-49yrs, Not Pregnant) Currently Using a Contraceptive Method: Stratified by Method

	Frequency	Percent	Cum.
No Method	234	0.44	0.436
Pill	89	0.17	0.621
Injection	71	0.12	0.794
Sterilization	97	0.19	0.916
Barrier	15	0.03	0.918
IUD	12	0.03	0.947
Abstain	1	0.00	0.975
Rhythm	1	0.00	0.977
Lactation	12	0.02	1.000
note: data weighted	532	1.00	

Women (15-49yrs, Not Pregnant) Who Do Not Want More Children
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	34	0.76	0.6087	0.9070
CARE	92	0.78	0.6959	0.8689
CRS	32	0.67	0.5022	0.8397
HOPE	48	0.69	0.5544	0.8244
PARTNERS	27	0.85	0.7074	0.9889
PCI	45	0.70	0.5645	0.8402
PLAN	88	0.80	0.7196	0.8896
SAVE	59	0.89	0.8128	0.9747
Nicasalud	425	0.76	0.7190	0.8019

Women (15-49yrs, Not Pregnant) Who Do Not Want More Children
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	147	0.87	0.8197	0.9294
Esteli/Madriz	126	0.77	0.6973	0.8473
Jinotega	152	0.70	0.6272	0.7761
Nicasalud	425	0.76	0.7190	0.8019

Women (15-49yrs, Not Pregnant) Who Report Birth Interval Should Be at Least 24 Months
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	36	0.92	0.8261	1.0110
CARE	108	0.91	0.8561	0.9662
CRS	32	0.74	0.5788	0.8951
HOPE	50	0.89	0.8017	0.9799
PARTNERS	27	0.92	0.8211	1.0282
PCI	45	0.96	0.9010	1.0191
PLAN	95	0.90	0.8375	0.9615
SAVE	62	0.85	0.7532	0.9382
Nicasalud	455	0.89	0.8573	0.9167

Women (15-49yrs, Not Pregnant) Who Report Birth Interval Should Be at Least 24 Months
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	157	0.86	0.8020	0.9138
Esteli/Madriz	144	0.91	0.8672	0.9609
Jinotega	154	0.88	0.8324	0.9359
Nicasalud	455	0.89	0.8573	0.9167

Women (Less than 24yrs, with at Least One Child) Who Had First Birth
before Age 20 by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	11	0.91	0.7383	1.0914
CARE	14	0.88	0.6949	1.0592
CRS	11	0.89	0.6855	1.0871
HOPE	18	1.00	1.0000	1.0000
PARTNERS	7	0.87	0.5862	1.1440
PCI	15	0.71	0.4710	0.9547
PLAN	32	0.94	0.8484	1.0240
SAVE	14	0.77	0.5384	1.0043
Nicasalud	122	0.88	0.8250	0.9417

Women (Less than 24yrs, with at Least One Child) Who Had First Birth
before Age 20 by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	46	0.82	0.7077	0.9359
Esteli/Madriz	25	0.90	0.7783	1.0227
Jinotega	51	0.90	0.8093	0.9822
Nicasalud	122	0.88	0.8250	0.9417

Women (15-49yrs, Not Pregnant) Currently Using a Contraceptive Method
by Catchment Areas of 8 PVO's and in Nicasalud [CPR]

	n	MEAN	95% c.i.	
ADRA	38	0.60	0.4429	0.7645
CARE	114	0.62	0.5274	0.7101
CRS	38	0.33	0.1795	0.4898
HOPE	57	0.62	0.4868	0.7467
PARTNERS	38	0.65	0.4883	0.8028
PCI	57	0.51	0.3813	0.6484
PLAN	114	0.57	0.4777	0.6639
SAVE	76	0.56	0.4491	0.6782
Nicasalud	532	0.56	0.5210	0.6071

Women (15-49yrs, Not Pregnant) Currently Using a Contraceptive Method
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.57	0.4930	0.6372
Esteli/Madriz	152	0.61	0.5336	0.6922
Jinotega	190	0.54	0.4650	0.6100
Nicasalud	532	0.56	0.5210	0.6071

Women (15-49yrs, Not Pregnant) Currently Using a Modern
Contraceptive Method by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.47	0.3095	0.6379
CARE	114	0.57	0.4735	0.6599
CRS	38	0.33	0.1795	0.4898
HOPE	57	0.62	0.4868	0.7467
PARTNERS	38	0.62	0.4569	0.7766
PCI	57	0.47	0.3409	0.6078
PLAN	114	0.56	0.4676	0.6544
SAVE	76	0.57	0.4594	0.6878
Nicasalud	532	0.54	0.4932	0.5797

Women (15-49yrs, Not Pregnant) Currently Using a Modern
Contraceptive Method by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.57	0.4990	0.6430
Esteli/Madriz	152	0.53	0.4493	0.6118
Jinotega	190	0.52	0.4501	0.5955
Nicasalud	532	0.54	0.4932	0.5797

Women (15-49yrs, Not Pregnant) Know Three or More Modern
Contraceptive Methods by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.78	0.6441	0.9164
CARE	114	0.73	0.6466	0.8137
CRS	38	0.26	0.1184	0.4079
HOPE	57	0.58	0.4520	0.7155
PARTNERS	38	0.65	0.4937	0.8073
PCI	57	0.66	0.5314	0.7849
PLAN	114	0.54	0.4489	0.6364
SAVE	76	0.67	0.5590	0.7765
Nicasalud	532	0.63	0.5847	0.6687

Women (15-49yrs, Not Pregnant) Know Three or More Modern
Contraceptive Methods by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.64	0.5721	0.7116
Esteli/Madriz	152	0.75	0.6791	0.8201
Jinotega	190	0.55	0.4816	0.6263
Nicasalud	532	0.63	0.5847	0.6687

Women (15-49yrs, Not Pregnant) Know Where to Go to
Obtain Contraceptives by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.89	0.7895	0.9939
CARE	114	0.92	0.8737	0.9681
CRS	38	0.63	0.4687	0.7866
HOPE	57	0.81	0.7072	0.9162
PARTNERS	38	0.81	0.6852	0.9414
PCI	57	0.93	0.8606	0.9977
PLAN	114	0.87	0.8028	0.9307
SAVE	76	0.94	0.8814	0.9933
Nicasalud	532	0.87	0.8357	0.8949

Women (15-49yrs, Not Pregnant) Know Where to Go to
Obtain Contraceptives by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.92	0.8839	0.9616
Esteli/Madriz	152	0.91	0.8628	0.9562
Jinotega	190	0.81	0.7573	0.8705
Nicasalud	532	0.87	0.8357	0.8949

Women (15-49yrs, Not Pregnant) Who Report Birth Interval
Should Be at Least 36 Months by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	36	0.61	0.4407	0.7711
CARE	108	0.57	0.4757	0.6671
CRS	32	0.33	0.1613	0.4991
HOPE	50	0.53	0.3838	0.6691
PARTNERS	27	0.64	0.4565	0.8321
PCI	45	0.48	0.3268	0.6281
PLAN	95	0.47	0.3654	0.5713
SAVE	62	0.46	0.3326	0.5879
Nicasalud	455	0.51	0.4623	0.5561

Women (15-49yrs, Not Pregnant) Who Report Birth Interval
Should be at Least 36 Months by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	157	0.46	0.3823	0.5419
Esteli/Madriz	144	0.58	0.5025	0.6673
Jinotega	154	0.48	0.4040	0.5656
Nicasalud	455	0.51	0.4623	0.5561

Most Recent Births Spaced by at Least 24 Months of Mothers
with Children 0-11 mo. by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.69	0.5349	0.8397
CARE	114	0.20	0.1277	0.2792
CRS	38	0.25	0.1062	0.3903
HOPE	57	0.52	0.3863	0.6534
PARTNERS	38	0.44	0.2768	0.6032
PCI	57	0.44	0.3046	0.5697
PLAN	114	0.41	0.3144	0.4993
SAVE	76	0.39	0.2765	0.5017
Nicasalud	532	0.42	0.3725	0.4580

Most Recent Births Spaced by at Least 24 Months of Mothers
with Children 0-11 mo. by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.39	0.3217	0.4638
Esteli/Madriz	152	0.39	0.3122	0.4711
Jinotega	190	0.44	0.3665	0.5109
Nicasalud	532	0.42	0.3725	0.4580

Most Recent Births Spaced by at Least 36 Months of Mothers
with Children 0-11 mo. by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.28	0.1365	0.4333
CARE	114	0.10	0.0425	0.1547
CRS	38	0.15	0.0353	0.2726
HOPE	57	0.27	0.1554	0.3940
PARTNERS	38	0.29	0.1383	0.4357
PCI	57	0.23	0.1166	0.3411
PLAN	114	0.23	0.1543	0.3136
SAVE	76	0.20	0.1047	0.2882
Nicasalud	532	0.21	0.1777	0.2488

Most Recent Births Spaced by at Least 36 Months of Mothers
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.20	0.1456	0.2629
Esteli/Madriz	152	0.17	0.1098	0.2323
Jinotega	190	0.24	0.1780	0.3023
Nicasalud	532	0.21	0.1777	0.2488

Most Recent Pregnancy Was Unintended of Mothers
with Children 0-11 mo. by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.68	0.5314	0.8370
CARE	111	0.44	0.3410	0.5301
CRS	36	0.67	0.5131	0.8306
HOPE	57	0.62	0.4947	0.7536
PARTNERS	38	0.49	0.3233	0.6520
PCI	57	0.64	0.5093	0.7662
PLAN	111	0.53	0.4348	0.6252
SAVE	76	0.51	0.3947	0.6256
Nicasalud	524	0.57	0.5309	0.6174

Most Recent Pregnancy Was Unintended of Mothers
with Children 0-11 mo. by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	187	0.51	0.4408	0.5874
Esteli/Madriz	149	0.53	0.4517	0.6157
Jinotega	188	0.62	0.5537	0.6954
Nicasalud	524	0.57	0.5309	0.6174

Mothers of Infants 0 - 5 mo. Who Are Correctly and Consciously
Using LAM by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	21	0.28	0.0768	0.4770
CARE	58	0.13	0.0405	0.2183
CRS	23	0.00	0.0000	0.0000
HOPE	30	0.04	-0.0329	0.1107
PARTNERS	21	0.10	-0.0359	0.2272
PCI	21	0.15	-0.0101	0.3085
PLAN	53	0.00	0.0000	0.0000
SAVE	36	0.01	-0.0234	0.0428
Nicasalud	263	0.08	0.0491	0.1174

Mothers of Infants 0 - 5 mo. Who Are Correctly and Consciously
using LAM by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	89	0.01	-0.0109	0.0261
Esteli/Madriz	79	0.19	0.0986	0.2751
Jinotega	95	0.06	0.0109	0.1087
Nicasalud	263	0.08	0.0491	0.1174

Women (15-49yrs, Not Pregnant) Knowledge of a Contraceptive Method: Stratified by Method
Note: Multiple Responses allowed and Data not Weighted

	Frequency	Percent
Norplant	2	0.376
Injectables	376	70.677
Oral Contraceptive	455	85.526
IUD	277	52.068
Diaphragm	13	2.444
Condom	239	44.925
Foam	22	4.135
Tubal Ligation	94	17.669
Vasectomy	13	2.444
LAM	9	1.692
Rhythm	28	5.263
Abstain	4	0.752
Withdrawl	2	0.376
Don't Know	46	8.647
Other	1	0.188

Reasons Reported from Women (15-49yrs) Why They Are Not Using a Contraceptive
Note: Data Are Weighted

	Frequency	Percent
Want more kids	6	3.1
Side Effects	5	3.11
Partner prohibits	8	6.36
Difficult to get	1	0.53
Religious reasons	7	5.9
No partner	58	54.28
Other	35	26.72
Total	120	100

Civil Status: Men

	Frequency	Percent	Cum.
Married	171	33.97	33.97
Divorced	1	0.11	34.08
Live with partner	149	30.22	64.3
Have partner, don't live with	1	0.09	64.39
No partner	26	3.4	67.79
Single	171	32.21	100

Civil Status: Women 15-49yrs, Not Pregnant

	Frequency	Percent	Cum.
Married	154	29.06	29.06
Divorced	2	0.38	29.44
Live with partner	219	41.32	70.76
Have partner, don't live with	6	1.13	71.89
No partner	25	4.72	76.61
Widowed	9	1.7	78.31
Single	115	21.7	100.01

Education: Men
Highest Level of Education Completed

	Frequency	Percent	Cum.
None	117	22.7	22.7
Primary	108	19.49	42.19
Did not complete primary	216	42.93	85.12
Secondary	66	11.83	96.95
More than secondary	12	3.05	100

Education: Women 15-49yrs, Not Pregnant
Highest Level of Education Completed

	Frequency	Percent	Cum.
None	96	20.73	20.73
Primary	107	19.27	40
Did not complete primary	224	43.31	83.31
Secondary	79	14.51	97.82
More than secondary	9	1.44	99.26
Other	3	0.75	100.01

Men (15-49yrs) Able to Read
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.73	0.5848	0.8765
CARE	114	0.54	0.4460	0.6335
CRS	38	0.26	0.1119	0.3986
HOPE	57	0.47	0.3361	0.6029
PARTNERS	38	0.51	0.3430	0.6718
PCI	57	0.50	0.3666	0.6339
PLAN	104	0.68	0.5897	0.7734
SAVE	74	0.59	-0.3618	1.5442
Nicasalud	520	0.53	0.4836	0.5712

Men (15-49yrs) Able to Read
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.61	0.5357	0.6824
Esteli/Madriz	152	0.61	0.5348	0.6933
Jinotega	190	0.44	0.3710	0.5156
Nicasalud	520	0.53	0.4836	0.5712

Women (15-49yrs, Not Pregnant) Able to Read
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.73	0.5884	0.8791
CARE	114	0.60	0.5069	0.6914
CRS	38	0.26	0.1151	0.4033
HOPE	57	0.47	0.3402	0.6071
PARTNERS	38	0.47	0.3047	0.6328
PCI	57	0.70	0.5753	0.8207
PLAN	114	0.59	0.5003	0.6852
SAVE	76	0.61	0.4983	0.7235
Nicasalud	532	0.57	0.5237	0.6097

Women (15-49yrs, Not Pregnant) Able to Read
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.61	0.5361	0.6782
Esteli/Madriz	152	0.65	0.5739	0.7291
Jinotega	190	0.50	0.4292	0.5747
Nicasalud	532	0.57	0.5237	0.6097

Mothers of 0-11 mo. Child View Women as Decision Makers
in Seeking Care for Sick Child by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.68	0.5279	0.8344
CARE	114	0.75	0.6685	0.8315
CRS	38	0.58	0.4166	0.7413
HOPE	57	0.66	0.5372	0.7898
PARTNERS	38	0.76	0.6145	0.8970
PCI	57	0.76	0.6477	0.8747
PLAN	114	0.83	0.7631	0.9033
SAVE	76	0.79	0.6932	0.8821
Nicasalud	532	0.72	0.6835	0.7613

Men (15-49yrs) View Women as Decision Makers in Seeking Care
for Sick Child by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.34	0.1847	0.4964
CARE	114	0.29	0.2056	0.3766
CRS	38	0.43	0.2654	0.5908
HOPE	57	0.22	0.1102	0.3321
PARTNERS	38	0.27	0.1224	0.4137
PCI	57	0.18	0.0791	0.2854
PLAN	104	0.50	0.4005	0.5975
SAVE	74	0.28	0.1745	0.3846
Nicasalud	520	0.28	0.2440	0.3232

Mothers of 0-11 mo. Child View Women as Decision Makers
in Seeking Care for Sick Child by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.80	0.7386	0.8556
Esteli/Madriz	152	0.72	0.6504	0.7960
Jinotega	190	0.69	0.6182	0.7533
Nicasalud	532	0.72	0.6835	0.7613

Men (15-49yrs) View Women as Decision Makers in Seeking Care
for Sick Child by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.32	0.2527	0.3933
Esteli/Madriz	152	0.31	0.2350	0.3856
Jinotega	190	0.25	0.1880	0.3141
Nicasalud	520	0.28	0.2440	0.3232

Mothers of 0-11 mo. Child View Couple as Decision Makers
in Seeking Care for Sick Child by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.19	0.0579	0.3136
CARE	114	0.19	0.1193	0.2679
CRS	38	0.30	0.1467	0.4472
HOPE	57	0.19	0.0878	0.2990
PARTNERS	38	0.17	0.0449	0.2906
PCI	57	0.18	0.0804	0.2875
PLAN	114	0.09	0.0341	0.1402
SAVE	76	0.08	0.0187	0.1454
Nicasalud	532	0.17	0.1401	0.2057

Men (15-49yrs) View Couple as Decision Makers in Seeking Care
for Sick Child by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.37	0.2126	0.5304
CARE	114	0.39	0.3006	0.4844
CRS	38	0.18	0.0513	0.3022
HOPE	57	0.56	0.4243	0.6898
PARTNERS	38	0.30	0.1467	0.4471
PCI	57	0.59	0.4600	0.7227
PLAN	104	0.20	0.1235	0.2819
SAVE	74	0.19	0.1018	0.2871
Nicasalud	520	0.39	0.3434	0.4288

Mothers of 0-11 mo. Child View Couple as Decision Makers
in Seeking Care for Sick Child by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.08	0.0429	0.1232
Esteli/Madriz	152	0.19	0.1266	0.2545
Jinotega	190	0.21	0.1481	0.2660
Nicasalud	532	0.17	0.1401	0.2057

Men (15-49yrs) View Couple as Decision Makers in Seeking Care
for Sick Child by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.20	0.1364	0.2558
Esteli/Madriz	152	0.38	0.3052	0.4635
Jinotega	190	0.48	0.4030	0.5483
Nicasalud	520	0.39	0.3434	0.4288

**Women (15-49yrs, Not Pregnant) View Women as Decision Makers
in Seeking Care for Ill Woman by Catchment Areas of 8 PVO's and in Nicasalud**

	n	MEAN	95% c.i.	
ADRA	38	0.39	0.2297	0.5505
CARE	114	0.53	0.4397	0.6274
CRS	38	0.36	0.2027	0.5184
HOPE	57	0.43	0.2953	0.5598
PARTNERS	38	0.73	0.5805	0.8735
PCI	57	0.49	0.3524	0.6195
PLAN	114	0.61	0.5167	0.7003
SAVE	76	0.55	0.4325	0.6624
Nicasalud	532	0.49	0.4450	0.5318

**Men (15-49yrs) View Women as Decision Makers in Seeking Care
for Ill Woman by Catchment Areas of 8 PVO's and in Nicasalud**

	n	MEAN	95% c.i.	
ADRA	38	0.27	0.1235	0.4152
CARE	114	0.15	0.0865	0.2225
CRS	38	0.23	0.0880	0.3628
HOPE	57	0.20	0.0909	0.3036
PARTNERS	38	0.30	0.1502	0.4518
PCI	57	0.19	0.0887	0.3003
PLAN	104	0.48	0.3791	0.5760
SAVE	74	0.29	0.1840	0.3965
Nicasalud	520	0.23	0.1976	0.2720

**Women (15-49yrs, Not Pregnant) View Women as Decision Makers
in Seeking Care for Ill Woman by Region and in Nicasalud**

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.56	0.4895	0.6306
Esteli/Madriz	152	0.48	0.4128	0.5428
Jinotega	190	0.46	0.4000	0.5186
Nicasalud	532	0.49	0.4450	0.5318

**Men (15-49yrs) View Women as Decision Makers in Seeking Care
for Ill Woman by Region and in Nicasalud**

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.33	0.2567	0.3978
Esteli/Madriz	152	0.20	0.1342	0.2642
Jinotega	190	0.21	0.1513	0.2700
Nicasalud	520	0.23	0.1976	0.2720

**Women (15-49yrs, Not Pregnant) View Couple as Decision Makers
in Seeking care for Ill Woman by Catchment Areas of 8 PVO's and in Nicasalud**

	n	MEAN	95% c.i.	
ADRA	38	0.11	0.0044	0.2062
CARE	114	0.15	0.0845	0.2196
CRS	38	0.12	0.0133	0.2271
HOPE	57	0.06	-0.0035	0.1235
PARTNERS	38	0.11	0.0072	0.2132
PCI	57	0.13	0.0426	0.2245
PLAN	114	0.02	-0.0048	0.0527
SAVE	76	0.03	-0.0106	0.0636
Nicasalud	532	0.09	0.0650	0.1147

**Men (15-49yrs) View Couple as Decision Makers in Seeking Care
for Ill Woman by Catchment Areas of 8 PVO's and in Nicasalud**

	n	MEAN	95% c.i.	
ADRA	38	0.26	0.1184	0.4079
CARE	114	0.23	0.1495	0.3075
CRS	38	0.14	0.0253	0.2528
HOPE	57	0.19	0.0820	0.2900
PARTNERS	38	0.09	-0.0060	0.1787
PCI	57	0.19	0.0869	0.2975
PLAN	104	0.10	0.0386	0.1553
SAVE	74	0.02	-0.0126	0.0539
Nicasalud	520	0.16	0.1261	0.1901

**Women (15-49yrs, Not Pregnant) View Couple as Decision Makers
in Seeking care for Ill Woman by Region and in Nicasalud**

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.03	0.0028	0.0491
Esteli/Madriz	152	0.13	0.0785	0.1893
Jinotega	190	0.10	0.0543	0.1406
Nicasalud	532	0.09	0.0650	0.1147

**Men (15-49yrs) View Couple as Decision Makers in Seeking Care
for Ill Woman by Region and in Nicasalud**

	n	MEAN	95% c.i.	
Chinandega/Leon	178	0.04	0.0078	0.0636
Esteli/Madriz	152	0.24	0.1723	0.3117
Jinotega	190	0.17	0.1159	0.2253
Nicasalud	520	0.16	0.1261	0.1901

Vaccination Coverage with MMR among Children 12-23 Months, Stratified by Age (in months)
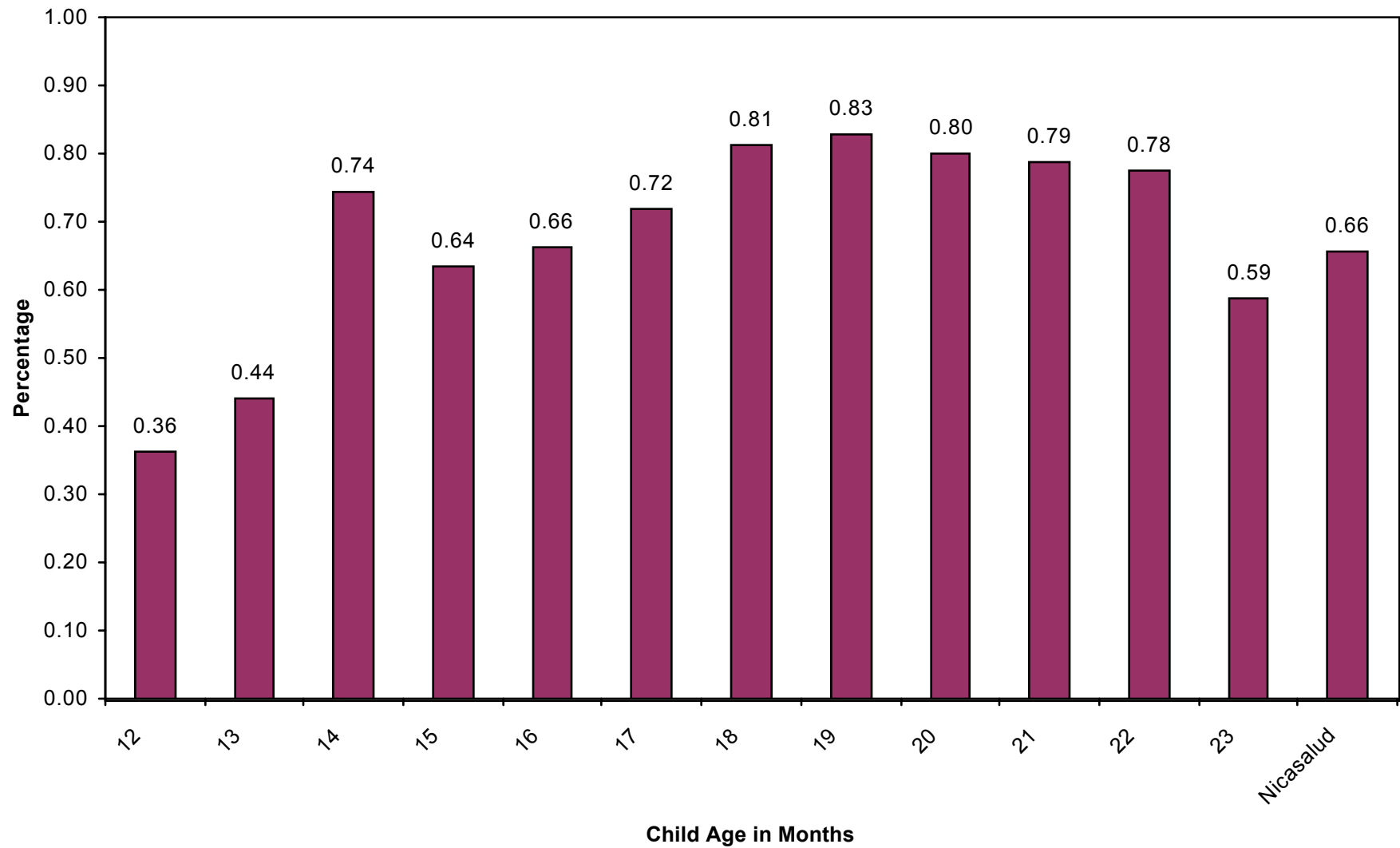
Child Age in Months	Percentage
12	0.36
13	0.44
14	0.74
15	0.64
16	0.66
17	0.72
18	0.81
19	0.83
20	0.80
21	0.79
22	0.78
23	0.59
Nicasalud	0.66

Vaccination Card with Mothers of Children 12-23 mo.
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.97	0.9180	1.0263
CARE	114	0.92	0.8645	0.9686
CRS	38	0.79	0.6554	0.9235
HOPE	57	0.85	0.7745	0.0474
PARTNERS	38	0.76	0.6145	0.8970
PCI	57	0.94	0.8694	1.0010
PLAN	114	0.85	0.7815	0.9163
SAVE	75	0.84	0.7545	0.9250
Nicasalud	531	0.88	0.8464	0.9038

Vaccination Card with Mothers of Children 12-23 mo.
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	189	0.84	0.7884	0.8949
Esteli/Madriz	152	0.94	0.8990	0.9774
Jinotega	190	0.86	0.8068	0.9084
Nicasalud	531	0.88	0.8464	0.9038

Vaccination Coverage with BCG by 12 mo. for Children 12-23 mo.
Using the Vaccination Card by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.97	0.9180	1.0263
CARE	114	0.87	0.8080	0.9341
CRS	38	0.67	0.5102	0.8205
HOPE	57	0.80	0.6894	0.9044
PARTNERS	38	0.60	0.4366	0.7591
PCI	57	0.90	0.8179	0.9792
PLAN	114	0.77	0.6900	0.8485
SAVE	75	0.80	0.7084	0.8940
Nicasalud	531	0.82	0.7877	0.8543

Vaccination Coverage with BCG by 12 mo. for Children 12-23 mo.
Using the Vaccination Card by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	189	0.79	0.7356	0.8535
Esteli/Madriz	152	0.91	0.8639	0.9568
Jinotega	190	0.79	0.7265	0.8458
Nicasalud	531	0.82	0.7877	0.8543

Vaccination Coverage with Polio1-3 by 12 mo. for Children 12-23 mo.
Using the Vaccination Card by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.94	0.8689	1.0197
CARE	114	0.90	0.8413	0.9550
CRS	38	0.59	0.4282	0.7516
HOPE	57	0.61	0.4804	0.7410
PARTNERS	38	0.66	0.5046	0.8161
PCI	57	0.86	0.7678	0.9530
PLAN	114	0.80	0.7223	0.8734
SAVE	75	0.80	0.7067	0.8928
Nicasalud	531	0.77	0.7378	0.8105

Vaccination Coverage with Polio1-3 by 12 mo. for Children 12-23 mo.
Using the Vaccination Card by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	189	0.80	0.7410	0.8578
Esteli/Madriz	152	0.92	0.8711	0.9613
Jinotega	190	0.69	0.6190	0.7540
Nicasalud	531	0.77	0.7378	0.8105

Vaccination Coverage with DPT1-3 by 12 mo. for Children 12-23 mo.
Using the Vaccination Card by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.92	0.8301	1.0090
CARE	114	0.87	0.8078	0.9340
CRS	38	0.55	0.3887	0.7157
HOPE	57	0.61	0.4804	0.7410
PARTNERS	38	0.63	0.4730	0.7902
PCI	57	0.85	0.7600	0.9486
PLAN	114	0.81	0.7316	0.8804
SAVE	75	0.79	0.6966	0.8856
Nicasalud	531	0.76	0.7233	0.7974

Vaccination Coverage with MMR by 23 mo. for Children 12-23 mo.
Using the Vaccination Card by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	36	0.97	0.9197	1.0278
CARE	99	0.85	0.7798	0.9235
CRS	28	0.54	0.3430	0.7270
HOPE	49	0.56	0.4196	0.7060
PARTNERS	28	0.72	0.5519	0.8960
PCI	50	0.82	0.7079	0.9283
PLAN	96	0.81	0.7267	0.8885
SAVE	62	0.81	0.7102	0.9109
Nicasalud	448	0.76	0.7184	0.7994

Vaccination Coverage with DPT1-3 by 12 mo. for Children 12-23 mo.
Using the Vaccination Card by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	189	0.79	0.7352	0.8532
Esteli/Madriz	152	0.89	0.8388	0.9408
Jinotega	190	0.68	0.6072	0.7434
Nicasalud	531	0.76	0.7233	0.7974

Vaccination Coverage with MMR by 23 mo. for Children 12-23 mo.
Using the Vaccination Card by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	158	0.81	0.7473	0.8726
Esteli/Madriz	135	0.90	0.8495	0.9526
Jinotega	155	0.65	0.5750	0.7286
Nicasalud	448	0.76	0.7184	0.7994

Note: % of Mothers who did not bring child for all 3 shots after bringing child for first shot.

Drop Out Rate of Children 12-23 mo. Vaccinated for DPT (DPT3 - DPT1)
Using the Vaccination Card by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	36	0.03	-0.0278	0.0803
CARE	99	0.02	-0.0095	0.0403
CRS	28	0.27	0.0955	0.4354
HOPE	49	0.28	0.1537	0.4140
PARTNERS	28	0.13	0.0013	0.2612
PCI	50	0.03	-0.0196	0.0701
PLAN	96	0.04	0.0014	0.0847
SAVE	62	0.04	-0.0091	0.0944
Nicasalud	448	0.11	0.0771	0.1354

Vaccination Coverage with MMR Stratified by the Age in Months
and in Nicasalud

	n	MEAN	95% c.i.	
12	50	0.36	0.2249	0.5010
13	55	0.44	0.3062	0.5771
14	51	0.74	0.6180	0.8665
15	46	0.64	0.4912	0.7801
16	41	0.66	0.5116	0.8128
17	42	0.72	0.5761	0.8600
18	46	0.81	0.6952	0.9296
19	39	0.83	0.7027	0.9512
20	38	0.80	0.6684	0.9342
21	34	0.79	0.6437	0.9330
22	43	0.78	0.6461	0.9058
23	45	0.59	0.4386	0.7376
Nicasalud	530	0.66	0.6150	0.6961

Drop Out Rate of Children 12-23 mo. Vaccinated for DPT (DPT3 - DPT1)
Using the Vaccination Card by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	158	0.04	0.0105	0.0750
Esteli/Madriz	135	0.02	-0.0043	0.0438
Jinotega	155	0.19	0.1241	0.2497
Nicasalud	448	0.11	0.0771	0.1354

Complete Vaccination Coverage of Children 12-23 mo. With Polio1-3, DPT1-3, BCG
Using the Vaccination Card by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.89	0.7895	0.9939
CARE	114	0.85	0.7814	0.9162
CRS	38	0.48	0.3203	0.6490
HOPE	57	0.55	0.4220	0.6876
PARTNERS	38	0.50	0.3331	0.6619
PCI	57	0.81	0.6997	0.9113
PLAN	114	0.70	0.6101	0.7831
SAVE	75	0.75	0.6468	0.8488
Nicasalud	531	0.71	0.6697	0.7486

Vitamin A Supplementation by 12 mo. for Children 12-23 mo.
Using the Vaccination Card by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.76	0.6215	0.9017
CARE	114	0.45	0.3601	0.5475
CRS	38	0.26	0.1151	0.4033
HOPE	57	0.63	0.5052	0.7627
PARTNERS	38	0.42	0.2540	0.5782
PCI	57	0.62	0.4856	0.7456
PLAN	114	0.30	0.2120	0.3841
SAVE	75	0.60	0.4861	0.7139
Nicasalud	531	0.55	0.5055	0.5920

Complete Vaccination Coverage of Children 12-23 mo. With Polio1-3, DPT1-3, BCG
Using the Vaccination Card by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	189	0.74	0.6729	0.8013
Esteli/Madriz	152	0.87	0.8099	0.9210
Jinotega	190	0.61	0.5417	0.6834
Nicasalud	531	0.71	0.6697	0.7486

Vitamin A Supplementation by 12 mo. for Children 12-23 mo.
Using the Vaccination Card by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	189	0.54	0.4640	0.6095
Esteli/Madriz	152	0.57	0.4930	0.6540
Jinotega	190	0.54	0.4689	0.6139
Nicasalud	531	0.55	0.5055	0.5920

Complete Vaccination Coverage of Children 12-23 mo. Using the Vaccination Card
among Mothers who Have Card by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	37	0.92	0.8254	1.0091
CARE	103	0.93	0.8743	0.9779
CRS	30	0.61	0.4331	0.7947
HOPE	49	0.65	0.5130	0.7882
PARTNERS	29	0.66	0.4791	0.8376
PCI	53	0.86	0.7654	0.9572
PLAN	97	0.82	0.7422	0.8989
SAVE	63	0.89	0.8112	0.9698
Nicasalud	461	0.81	0.7738	0.8469

Complete Vaccination Coverage of Children 12-23 mo. Using the Vaccination Card
among Mothers who Have Card by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	160	0.88	0.8234	0.9280
Esteli/Madriz	140	0.92	0.8772	0.9679
Jinotega	161	0.71	0.6429	0.7857
Nicasalud	461	0.81	0.7738	0.8469

Exclusive Breastfeeding among Mothers of Infants 0-5 mo.
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	21	0.43	0.2080	0.6507
CARE	58	0.49	0.3537	0.6185
CRS	23	0.41	0.2031	0.6230
HOPE	30	0.25	0.0930	0.4167
PARTNERS	21	0.35	0.1352	0.5613
PCI	21	0.58	0.3556	0.7976
PLAN	53	0.06	-0.0050	0.1285
SAVE	36	0.18	0.0531	0.3151
Nicasalud	263	0.35	0.2885	0.4062

Exclusive Breastfeeding among Mothers of Infants 0-5 mo.
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	89	0.16	0.0800	0.2355
Esteli/Madriz	79	0.46	0.3510	0.5769
Jinotega	95	0.37	0.2688	0.4678
Nicasalud	263	0.35	0.2885	0.4062

Exclusive Breastfeeding among Mothers of Infants 0-11 mo.
Stratified by Age in Months and in Nicasalud

	n	MEAN	95% c.i.	
0	28	0.63	0.4414	0.8136
1	42	0.61	0.4528	0.7581
2	62	0.44	0.3090	0.5630
3	49	0.21	0.0901	0.3241
4	48	0.16	0.0534	0.2675
5	34	0.16	0.0327	0.2883
6	48	0.06	-0.0104	0.1271
7	54	0.04	-0.0138	0.0947
8	44	0.02	-0.0228	0.0571
9	45	0.00	0.0000	0.0000
10	39	0.03	-0.0262	0.0824
11	38	0.04	-0.0246	0.1106
Nicasalud	531	0.20	0.1613	0.2301

	n	MEAN	95% c.i.	
Nicasalud (0-5 mo.)	263	0.35	0.2885	0.4062

Complimentary Breastfeeding among Mothers of Children 6-9 mo.
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	9	1.00	1.0000	1.0000
CARE	37	0.71	0.5597	0.8620
CRS	11	0.87	0.6510	1.0815
HOPE	19	0.77	0.5753	0.9704
PARTNERS	14	0.35	0.0820	0.6096
PCI	27	0.76	0.5985	0.9312
PLAN	46	0.50	0.3532	0.6513
SAVE	28	0.50	0.3049	0.6898
Nicasalud	191	0.69	0.6270	0.7608

Complimentary Breastfeeding among Mothers of Children 6-9 mo.
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	74	0.50	0.3814	0.6155
Esteli/Madriz	46	0.81	0.6879	0.9238
Jinotega	71	0.74	0.6378	0.8469
Nicasalud	191	0.69	0.6270	0.7608

Complimentary Breastfeeding among Mothers of 6-9 mo. Infants
Stratified by Age in Months and in Nicasalud

	n	MEAN	95% c.i.	
6	48	0.68	0.5450	0.8170
7	54	0.71	0.5802	0.8306
8	44	0.72	0.5821	0.8562
9	45	0.67	0.5315	0.8144
Nicasalud	191	0.69	0.6270	0.7608

Mothers of Children 0-11 mo. Who Gave Newborn Milk within First Hour after Deliver
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.71	0.5596	0.8583
CARE	114	0.75	0.6686	0.8315
CRS	38	0.47	0.3095	0.6379
HOPE	57	0.52	0.3821	0.6492
PARTNERS	38	0.44	0.2728	0.5989
PCI	57	0.68	0.5515	0.8016
PLAN	114	0.80	0.7281	0.8778
SAVE	76	0.67	0.5649	0.7815
Nicasalud	532	0.63	0.5926	0.6762

Children 12-23 mo. Currently Being Breastfed by Mothers
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.72	0.5739	0.8687
CARE	114	0.52	0.4247	0.6127
CRS	38	0.42	0.2625	0.5875
HOPE	57	0.35	0.2197	0.4741
PARTNERS	38	0.39	0.2317	0.5528
PCI	57	0.64	0.5093	0.7662
PLAN	114	0.46	0.3636	0.5510
SAVE	75	0.45	0.3391	0.5706
Nicasalud	531	0.49	0.4482	0.5350

Mothers of Children 0-11 mo. Who Gave Newborn Milk within First Hour after Deliver
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.70	0.6334	0.7667
Esteli/Madriz	152	0.73	0.6622	0.8060
Jinotega	190	0.55	0.4771	0.6219
Nicasalud	532	0.63	0.5926	0.6762

Children 12-23 mo. Currently Being Breastfed by Mothers
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	189	0.46	0.3827	0.5280
Esteli/Madriz	152	0.60	0.5177	0.6773
Jinotega	190	0.45	0.3802	0.5250
Nicasalud	531	0.49	0.4482	0.5350

Mothers of Children 0-11 mo. Who Know to Start Complimentary Breastfeeding at Age 6 Months
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.61	0.4495	0.7703
CARE	114	0.37	0.2823	0.4644
CRS	38	0.39	0.2271	0.5474
HOPE	57	0.50	0.3682	0.6354
PARTNERS	38	0.35	0.1927	0.5063
PCI	57	0.45	0.3126	0.5782
PLAN	114	0.30	0.2092	0.3808
SAVE	76	0.29	0.1827	0.3916
Nicasalud	532	0.42	0.3728	0.4584

Mothers of Children 0-11 mo. Who Know to Start Complimentary Breastfeeding at Age 6 Months
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.29	0.2229	0.3547
Esteli/Madriz	152	0.47	0.3842	0.5465
Jinotega	190	0.45	0.3783	0.5231
Nicasalud	532	0.42	0.3728	0.4584

Growth Card with Mothers of Children 0-11 mo.
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.92	0.8301	1.0090
CARE	114	0.84	0.7742	0.9112
CRS	38	0.35	0.1893	0.5020
HOPE	57	0.74	0.6209	0.8558
PARTNERS	38	0.82	0.6915	0.9451
PCI	57	0.90	0.8188	0.9797
PLAN	114	0.84	0.7664	0.9057
SAVE	76	0.77	0.6689	0.8643
Nicasalud	532	0.78	0.7401	0.8124

Growth Card with Mothers of Children 0-11 mo.
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.78	0.7208	0.8411
Esteli/Madriz	152	0.87	0.8183	0.9268
Jinotega	190	0.72	0.6576	0.7878
Nicasalud	532	0.78	0.7401	0.8124

Mothers of Children 2-11 mo. Who Had Their Child Weighed in the Past 2 Months
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	33	0.94	0.8614	1.0250
CARE	95	0.81	0.7246	0.8877
CRS	32	0.48	0.3020	0.6609
HOPE	48	0.58	0.4322	0.7205
PARTNERS	35	0.69	0.5286	0.8465
PCI	53	0.74	0.6167	0.8604
PLAN	100	0.90	0.8444	0.9630
SAVE	66	0.77	0.6639	0.8732
Nicasalud	462	0.73	0.6840	0.7671

Mothers of Children 2-11 mo. Who Had Their Child Weighed in the Past 2 Months
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	166	0.80	0.7341	0.8594
Esteli/Madriz	128	0.86	0.7995	0.9223
Jinotega	168	0.62	0.5464	0.6965
Nicasalud	462	0.73	0.6840	0.7671

Growth Card with Mothers of Children 0-11 mo.
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.92	0.8301	1.0090
CARE	114	0.84	0.7742	0.9112
CRS	38	0.35	0.1893	0.5020
HOPE	57	0.74	0.6209	0.8558
PARTNERS	38	0.82	0.6915	0.9451
PCI	57	0.90	0.8188	0.9797
PLAN	114	0.84	0.7664	0.9057
SAVE	76	0.77	0.6689	0.8643
Nicasalud	532	0.78	0.7401	0.8124

Growth Card with Mothers of Children 0-11 mo.
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.78	0.7208	0.8411
Esteli/Madriz	152	0.87	0.8183	0.9268
Jinotega	190	0.72	0.6576	0.7878
Nicasalud	532	0.78	0.7401	0.8124

Mothers of Children 2-11 mo. Who Had Their Child Weighed in the Past 2 Months
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	33	0.94	0.8614	1.0250
CARE	95	0.81	0.7246	0.8877
CRS	32	0.48	0.3020	0.6609
HOPE	48	0.58	0.4322	0.7205
PARTNERS	35	0.69	0.5286	0.8465
PCI	53	0.74	0.6167	0.8604
PLAN	100	0.90	0.8444	0.9630
SAVE	66	0.77	0.6639	0.8732
Nicasalud	462	0.73	0.6840	0.7671

Mothers of Children 2-11 mo. Who Had Their Child Weighed in the Past 2 Months
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	166	0.80	0.7341	0.8594
Esteli/Madriz	128	0.86	0.7995	0.9223
Jinotega	168	0.62	0.5464	0.6965
Nicasalud	462	0.73	0.6840	0.7671

Children 0-23 mo. Who Had Diarrhea in the Past 2 Weeks
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	76	0.13	0.0535	0.2096
CARE	228	0.21	0.1567	0.2650
CRS	76	0.38	0.2677	0.4919
HOPE	114	0.40	0.3040	0.4881
PARTNERS	76	0.26	0.1615	0.3649
PCI	114	0.39	0.3027	0.4866
PLAN	228	0.28	0.2234	0.3430
SAVE	151	0.28	0.2045	0.3508
Nicasalud	1063	0.30	0.2753	0.3317

Children 0-23 mo. Who Had Diarrhea in the Past 2 Weeks
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	379	0.28	0.2327	0.3250
Esteli/Madriz	304	0.18	0.1359	0.2241
Jinotega	380	0.38	0.3311	0.4309
Nicasalud	1063	0.30	0.2753	0.3317

Mothers Gave the Same or More Food or Liquid to Children 0-23 mo.
Who Had Diarrhea in Past 2 Weeks by Catchment Areas of 8 PVO's and in Nicasalud

	FOOD				LIQUID			
	n	MEAN	95% c.i.		n	MEAN	95% c.i.	
ADRA	10	0.49	0.1608	0.8275	10	1.00	1.0000	1.0000
CARE	50	0.42	0.2769	0.5587	50	0.57	0.4322	0.7148
CRS	30	0.51	0.3242	0.6955	30	0.62	0.4436	0.8035
HOPE	43	0.38	0.2295	0.5290	43	0.71	0.5669	0.8478
PARTNERS	20	0.55	0.3266	0.7827	20	0.60	0.3752	0.8248
PCI	46	0.74	0.6081	0.8700	46	0.82	0.7058	0.9347
PLAN	67	0.48	0.3569	0.6028	67	0.67	0.5503	0.7825
SAVE	41	0.65	0.4950	0.7974	41	0.91	-0.0175	1.8293
Nicasalud	307	0.53	0.4739	0.5880	307	0.75	0.6966	0.7961

Mothers Gave the Same or More Food or Liquid to Children 0-23 mo.
Who Had Diarrhea in Past 2 Weeks by Region and in Nicasalud

	n	MEAN	95% c.i.		n	MEAN	95% c.i.	
Chinandega/Leon	108	0.61	0.5168	0.7053	108	0.86	0.7872	0.9233
Esteli/Madriz	60	0.44	0.3103	0.5687	60	0.69	0.5748	0.8146
Jinotega	139	0.53	0.4407	0.6107	139	0.72	0.6446	0.7973
Nicasalud	307	0.53	0.4739	0.5880	307	0.75	0.6966	0.7961

Mothers Gave ORS to Children 0-23 mo. Who Had Diarrhea in Past 2 Weeks by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	108	0.16	0.0904	0.2327
Esteli/Madriz	60	0.21	0.1036	0.3156
Jinotega	139	0.19	0.1260	0.2604
Nicasalud	307	0.19	0.1441	0.2335

Mothers Gave Antibiotics to Children 0-23 mo. Who Had Diarrhea in Past 2 Weeks by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	108	0.18	0.1069	0.2559
Esteli/Madriz	60	0.08	0.0075	0.1461
Jinotega	139	0.20	0.1330	0.2695
Nicasalud	307	0.18	0.1337	0.2211

Mothers Gave ORS and Antibiotics to Children 0-23 mo. Who Had Diarrhea in Past 2 Weeks by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	108	0.05	0.0073	0.0907
Esteli/Madriz	60	0.04	-0.0103	0.0941
Jinotega	139	0.02	-0.0017	0.0512
Nicasalud	307	0.03	0.0124	0.0531

Mothers Gave Antidiarrheal to Children 0-23 mo. Who Had Diarrhea in Past 2 Weeks by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	108	0.20	0.1195	0.2731
Esteli/Madriz	60	0.13	0.0454	0.2228
Jinotega	139	0.08	0.0365	0.1307
Nicasalud	307	0.12	0.0796	0.1530

Mothers of Children 0-11 mo. Know of ORS Preparation - Verbal and Demonstration - by Catchment Areas of 8 PVO's and in Nicasalud

	ORSTELL				ORSSHOW			
	n	MEAN	95% c.i.		n	MEAN	95% c.i.	
ADRA	38	0.68	0.5279	0.8344	38	0.60	0.4396	0.7617
CARE	114	0.53	0.4374	0.6252	114	0.41	0.3201	0.5054
CRS	38	0.41	0.2513	0.5751	38	0.33	0.1725	0.4810
HOPE	57	0.56	0.4249	0.6904	57	0.42	0.2922	0.5564
PARTNERS	38	0.57	0.4063	0.7319	38	0.55	0.3815	0.7090
PCI	57	0.69	0.5694	0.8160	57	0.39	0.2624	0.5234
PLAN	114	0.63	0.5435	0.7248	114	0.46	0.3661	0.5537
SAVE	76	0.58	0.4631	0.6913	76	0.38	0.2652	0.4890
Nicasalud	532	0.58	0.5385	0.6241	532	0.43	0.3822	0.4680

Mothers of Children 0-11 mo. Know of ORS Preparation - Verbal and Demonstration - by Region and in Nicasalud

	ORSTELL				ORSSHOW			
	n	MEAN	95% c.i.		n	MEAN	95% c.i.	
Chinandega/Leon	190	0.59	0.5174	0.6606	190	0.39	0.3231	0.4653
Esteli/Madriz	152	0.59	0.5095	0.6696	152	0.49	0.4045	0.5672
Jinotega	190	0.57	0.5012	0.6451	190	0.41	0.3363	0.4793
Nicasalud	532	0.58	0.5385	0.6241	532	0.43	0.3822	0.4680

Mothers Know 2 or More Danger Signs of Dehydration in Children 12-23 mo.
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.66	0.5002	0.8125
CARE	114	0.48	0.3852	0.5732
CRS	38	0.15	0.0353	0.2726
HOPE	57	0.33	0.2043	0.4557
PARTNERS	38	0.28	0.1341	0.4300
PCI	57	0.48	0.3464	0.6135
PLAN	114	0.50	0.4053	0.5934
SAVE	75	0.49	0.3723	0.6047
Nicasalud	531	0.43	0.3875	0.4735

Mothers Know 2 or More Danger Signs of Dehydration in Children 12-23 mo.
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	189	0.49	0.4179	0.5637
Esteli/Madriz	152	0.55	0.4671	0.6291
Jinotega	190	0.34	0.2702	0.4079
Nicasalud	531	0.43	0.3875	0.4735

Mother Took Child 0-23 mo. to Hospital, Health Center, or Private Clinic
for Diarrhea in Past 2 Weeks by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	108	0.18	0.1050	0.2533
Esteli/Madriz	60	0.14	0.0478	0.2271
Jinotega	139	0.16	0.0938	0.2172
Nicasalud	307	0.16	0.1162	0.1996

Place Where Mothers Take Children 0-23 mo. Who Had Diarrhea in Past 2 Weeks
by Place of Treatment in Nicasalud

Note: Data are Weighted

	Freq.	Percent
Health Center	34	12.60
Hospital	5	2.12
Health Clinic	1	0.22
Brigadista	1	0.03
No Care	264	84.21
Other	2	0.82
Total	307	100.00

Mother of Child 0-23 mo. Who Had Diarrhea in Past 2 Weeks,
Knows Name of Hospital, Health Center, Health Clinic or Health Post by Nicasalud

	n	MEAN	95% c.i.	
Nicasalud	307	0.15	0.1086	0.1901

Cough and Rapid Breathing Present in Child 0-23 mo. in Past 2 Weeks
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	76	0.58	0.4649	0.6930
CARE	228	0.60	0.5302	0.6605
CRS	76	0.54	0.4246	0.6548
HOPE	114	0.54	0.4445	0.6321
PARTNERS	76	0.40	0.2862	0.5124
PCI	114	0.34	0.2492	0.4272
PLAN	228	0.66	0.5937	0.7198
SAVE	151	0.66	0.5817	0.7365
Nicasalud	1063	0.54	0.5141	0.5752

Cough and Rapid Breathing Present in Child 0-23 mo. in Past 2 Weeks
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	379	0.66	0.6098	0.7074
Esteli/Madriz	304	0.59	0.5324	0.6455
Jinotega	380	0.47	0.4148	0.5173
Nicasalud	1063	0.54	0.5141	0.5752

Mother Took Child 0-23 mo. with Cough and Rapid Breathing
to a Hospital, HC, or Private Clinic by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	44	0.34	0.1951	0.4840
CARE	131	0.25	0.1756	0.3278
CRS	43	0.31	0.1673	0.4528
HOPE	60	0.39	0.2599	0.5135
PARTNERS	31	0.25	0.0929	0.4097
PCI	41	0.38	0.2265	0.5335
PLAN	148	0.38	0.3042	0.4647
SAVE	98	0.26	0.1701	0.3481
Nicasalud	596	0.32	0.2784	0.3547

Mother Took Child 0-23 mo. with Cough and Rapid Breathing
to a Hospital, HC, or Private Clinic by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	246	0.29	0.2274	0.3428
Esteli/Madriz	175	0.29	0.2168	0.3538
Jinotega	175	0.36	0.2862	0.4317
Nicasalud	596	0.32	0.2784	0.3547

Mothers Know 2 or More Danger Signs of Pneumonia in Children 0-11 mo.
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.08	-0.0090	0.1699
CARE	114	0.05	0.0079	0.0885
CRS	38	0.00	0.0000	0.0000
HOPE	57	0.01	-0.0155	0.0303
PARTNERS	38	0.00	0.0000	0.0000
PCI	57	0.10	0.0178	0.1760
PLAN	114	0.13	0.0675	0.1945
SAVE	76	0.06	0.0067	0.1187
Nicasalud	532	0.05	-0.1396	0.2407

Mothers Know 2 or More Danger Signs of Pneumonia in Children 0-11 mo.
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.08	0.0381	0.1156
Esteli/Madriz	152	0.06	0.0219	0.0996
Jinotega	190	0.03	0.0066	0.0581
Nicasalud	532	0.05	-0.1396	0.2407

Place Where Mothers Take Children 0-23 mo. Who Had Cough and Fast Breathing
in Past 2 Weeks by Place of Treatment in Nicasalud

	Freq.	Percent	*Note: Data are Weighted*
Missing	175	25.96	
Health Center	126	22.03	
Health Post	32	5.54	
Health Clinic	17	2.07	
Pharmacy	8	1.53	
Hospital	11	1.31	
Brigadista	6	0.91	
Traditional	4	0.87	
Market	3	0.79	
No Care	169	29.78	
Other	45	9.2	
Total	382	99.99	

Mother of Child 0-23 mo. Who Had Cough in Past 2 Weeks,
Knows Name of Hospital, Health Center, Health Clinic or Health Post by Nicasalud

	n	MEAN	95% c.i.	
Nicasalud	596	0.31	0.2717	0.3475

Fever Present within Past 2 Weeks in Children 0-23 mo.
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	76	0.22	0.1255	0.3173
CARE	228	0.25	0.1889	0.3032
CRS	76	0.27	0.1715	0.3776
HOPE	114	0.39	0.2978	0.4813
PARTNERS	76	0.22	0.1264	0.3185
PCI	114	0.20	0.1269	0.2781
PLAN	228	0.30	0.2407	0.3625
SAVE	151	0.18	0.1151	0.2399
Nicasalud	1063	0.26	0.2320	0.2858

Fever Present within Past 2 Weeks in Children 0-23 mo.
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	379	0.20	0.1619	0.2448
Esteli/Madriz	304	0.24	0.1876	0.2853
Jinotega	380	0.30	0.2507	0.3447
Nicasalud	1063	0.26	0.2320	0.2858

Fever Present at Time of Interview in Children 0-23 mo.
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	76	0.03	-0.0107	0.0633
CARE	228	0.05	0.0225	0.0814
CRS	76	0.05	0.0011	0.1042
HOPE	114	0.06	0.0135	0.1009
PARTNERS	76	0.04	-0.0049	0.0863
PCI	114	0.05	0.0088	0.0905
PLAN	228	0.06	0.0257	0.0868
SAVE	151	0.05	0.0141	0.0850
Nicasalud	1063	0.05	0.0361	0.0627

CHILD SURVIVAL-MALARIA
Fever Present at Time of Interview in Children 0-23 mo.
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	379	0.05	0.0283	0.0735
Esteli/Madriz	304	0.04	0.0189	0.0650
Jinotega	380	0.05	0.0297	0.0756
Nicasalud	1063	0.05	0.0361	0.0627

Mother Took Child 0-23 mo. w/ Fever in Past 2 Weeks for Treatment
Same Day Fever Noticed by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	93	0.10	0.0408	0.1684
Esteli/Madriz	73	0.10	0.0300	0.1722
Jinotega	100	0.07	0.0178	0.1195
Nicasalud, Mother took child to HF same day s	266	0.08	0.0493	0.1172

Bednets in Home of Mothers with Children 12-23 mo.
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.13	0.0175	0.2364
CARE	114	0.34	0.2508	0.4291
CRS	38	0.26	0.1151	0.4033
HOPE	57	0.25	0.1301	0.3601
PARTNERS	38	0.21	0.0765	0.3446
PCI	57	0.32	0.1977	0.4476
PLAN	114	0.56	0.4714	0.6580
SAVE	76	0.48	0.3664	0.5987
Nicasalud	532	0.32	0.2798	0.3609

Bednets in Home of Mothers with Children 12-23 mo.
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	189	0.50	0.4268	0.5727
Esteli/Madriz	152	0.26	0.1860	0.3282
Jinotega	190	0.27	0.2035	0.3324
Nicasalud	532	0.32	0.2798	0.3609

Child Slept under Net in Households of Children 12-23 mo.
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.08	-0.0105	0.1653
CARE	114	0.14	0.0766	0.2081
CRS	38	0.05	-0.0208	0.1261
HOPE	57	0.15	0.0525	0.2420
PARTNERS	38	0.16	0.0380	0.2778
PCI	57	0.11	0.0289	0.1986
PLAN	114	0.14	0.0768	0.2084
SAVE	75	0.23	0.1297	0.3245
Nicasalud	531	0.14	0.1108	0.1713

Child Slept under Net in Households of Children 12-23 mo.
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	189	0.21	0.1501	0.2688
Esteli/Madriz	152	0.12	0.0648	0.1694
Jinotega	190	0.12	0.0735	0.1684
Nicasalud	531	0.14	0.1108	0.1713

Child Slept under Net in Households of Children 12-23 mo. with Bednets
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	5	0.61	0.1219	1.0975
CARE	37	0.42	0.2543	0.5832
CRS	9	0.20	-0.0814	0.4875
HOPE	13	0.60	0.3180	0.8835
PARTNERS	8	0.75	0.4227	1.0773
PCI	19	0.35	0.1273	0.5777
PLAN	77	0.25	0.1528	0.3522
SAVE	39	0.47	0.3087	0.6326
Nicasalud	207	0.44	0.3710	0.5094

Child Slept under Net in Households of Children 12-23 mo. with Bednets
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	116	0.42	0.3270	0.5111
Esteli/Madriz	42	0.46	0.2999	0.6110
Jinotega	49	0.45	0.3077	0.5950
Nicasalud	207	0.44	0.3710	0.5094

Nets Soaked in Insecticide of All Households of Children 12-23 mo.
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.00	0.0000	0.0000
CARE	114	0.03	0.0003	0.0692
CRS	38	0.00	0.0000	0.0000
HOPE	57	0.07	0.0014	0.1370
PARTNERS	38	0.02	-0.0263	0.0740
PCI	57	0.04	-0.0136	0.0868
PLAN	114	0.27	0.1840	0.3505
SAVE	75	0.06	0.0029	0.1104
Nicasalud	531	0.05	0.0318	0.0700

Nets in Good Condition of All Households with Mothers of Children 12-23 mo.
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	37	0.05	-0.0213	0.1293
CARE	114	0.22	0.1449	0.3015
CRS	37	0.17	0.0463	0.2979
HOPE	56	0.22	0.1073	0.3302
PARTNERS	37	0.13	0.0165	0.2392
PCI	57	0.13	0.0372	0.2144
PLAN	113	0.35	0.2557	0.4355
SAVE	74	0.31	0.1985	0.4143
Nicasalud	525	0.20	0.1683	0.2387

Nets Soaked in Insecticide of All Households of Children 12-23 mo.
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	189	0.10	0.0568	0.1446
Esteli/Madriz	152	0.02	-0.0022	0.0447
Jinotega	190	0.04	0.0134	0.0723
Nicasalud	531	0.05	0.0318	0.0700

Nets in Good Condition of All Households with Mothers of Children 12-23 mo.
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	187	0.31	0.2466	0.3828
Esteli/Madriz	151	0.16	0.0988	0.2180
Jinotega	187	0.17	0.1186	0.2299
Nicasalud	525	0.20	0.1683	0.2387

Nets Soaked in Insecticide among Households
of Children 12-23 mo. with Bednets by Nicasalud

	n	MEAN	95% c.i.	
Nicasalud	207	0.16	0.1081	0.2100

Mother Gave Antimalarial Medication to Child 0-23 mo. with Fever
before Going to Seek Care by Nicasalud

	n	MEAN	95% c.i.	
Nicasalud	266	0.00	-0.0038	0.0114

Nets Soaked in Insecticide w/in Past 6 months in Households
of Children 12-23mo. with Bednets by Nicasalud

	n	MEAN	95% c.i.	
Nicasalud	207	0.07	0.0375	0.1104

Nets Washed Less than 5 Times in Households
of Children 12-23 mo. with Bednets by Nicasalud

	n	MEAN	95% c.i.	
Nicasalud	207	0.45	0.3770	0.5155

Nets in Good Condition among Households
of Children 12-23 mo. with Bednets by Nicasalud

	n	MEAN	95% c.i.	
Nicasalud	201	0.65	0.5824	0.7173

Cooking Salt with Iodine Present in Household as Reported by Women (15-49yrs, Not Pregnant)
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.97	0.9180	1.0263
CARE	114	0.91	0.8601	0.9658
CRS	38	0.79	0.6603	0.9265
HOPE	57	0.76	0.6516	0.8783
PARTNERS	38	0.95	0.8739	1.0208
PCI	57	0.91	0.8345	0.9869
PLAN	112	0.92	0.8711	0.9729
SAVE	72	0.83	0.7427	0.9204
Nicasalud	526	0.86	0.8332	0.8932

Cooking Salt with Iodine Present in Household as Reported by Women (15-49yrs, Not Pregnant)
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	184	0.85	0.7984	0.9037
Esteli/Madriz	152	0.94	0.8961	0.9758
Jinotega	190	0.83	0.7754	0.8847
Nicasalud	526	0.86	0.8332	0.8932

Women (15-49yrs, Not Pregnant) Who Have Acceptable Source
of Drinking Water by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.92	0.8301	1.0090
CARE	114	0.79	0.7090	0.8633
CRS	38	0.59	0.4324	0.7553
HOPE	57	0.76	0.6437	0.8726
PARTNERS	38	0.88	0.7742	0.9873
PCI	57	0.70	0.5743	0.8199
PLAN	114	0.98	0.9570	1.0070
SAVE	76	0.98	0.9476	1.0123
Nicasalud	532	0.81	0.7804	0.8479

Women (15-49yrs, Not Pregnant) Who Have Acceptable Source
of Drinking Water by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.98	0.9602	1.0005
Esteli/Madriz	152	0.84	0.7780	0.8980
Jinotega	190	0.72	0.6555	0.7860
Nicasalud	532	0.81	0.7804	0.8479

Women (15-49yrs, Not Pregnant) Who Have Container with Top
to Store Water by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.87	0.7594	0.9806
CARE	114	0.69	0.6033	0.7773
CRS	38	0.45	0.2843	0.6113
HOPE	57	0.46	0.3219	0.5881
PARTNERS	38	0.53	0.3621	0.6905
PCI	57	0.45	0.3200	0.5861
PLAN	114	0.57	0.4742	0.6607
SAVE	76	0.65	0.5392	0.7596
Nicasalud	532	0.58	0.5375	0.6232

Women (15-49yrs, Not Pregnant) Who Have Container with Top
to Store Water by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.63	0.5623	0.7026
Esteli/Madriz	152	0.76	0.6907	0.8297
Jinotega	190	0.46	0.3869	0.5319
Nicasalud	532	0.58	0.5375	0.6232

Women (15-49yrs, Not Pregnant) Whose Distance to Water Source
Is 20 Minutes or Less by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.79	0.6516	0.9212
CARE	114	0.51	0.4181	0.6062
CRS	38	0.37	0.2134	0.5313
HOPE	57	0.34	0.2167	0.4706
PARTNERS	38	0.29	0.1383	0.4357
PCI	57	0.46	0.3260	0.5924
PLAN	114	0.04	0.0018	0.0734
SAVE	76	0.16	0.0753	0.2446
Nicasalud	532	0.38	0.3411	0.4255

Women (15-49yrs, Not Pregnant) Whose Distance to Water Source
Is 20 Minutes or Less by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.13	0.0850	0.1843
Esteli/Madriz	152	0.62	0.5398	0.6979
Jinotega	190	0.38	0.3081	0.4493
Nicasalud	532	0.38	0.3411	0.4255

**Households Use a Latrine or Toilet as Reported by Women
(15-49yrs, Not Pregnant) by Catchment Areas of 8 PVO's and in Nicasalud**

	n	MEAN	95% c.i.	
ADRA	38	0.95	0.8791	1.0218
CARE	114	0.78	0.7076	0.8622
CRS	38	0.51	0.3431	0.6718
HOPE	57	0.56	0.4267	0.6921
PARTNERS	38	0.69	0.5426	0.8456
PCI	57	0.74	0.6174	0.8532
PLAN	114	0.91	0.8554	0.9634
SAVE	76	0.95	0.9005	1.0006
Nicasalud	532	0.76	0.7180	0.7927

**Children's Feces Are Disposed in Sanitary Mechanism as Reported by Women
(15-49yrs, Not Pregnant) by Catchment Areas of 8 PVO's and in Nicasalud**

	n	MEAN	95% c.i.	
ADRA	38	0.82	0.6942	0.9466
CARE	114	0.69	0.6057	0.7793
CRS	37	0.40	0.2337	0.5598
HOPE	57	0.38	0.2474	0.5065
PARTNERS	38	0.61	0.4472	0.7683
PCI	57	0.52	0.3915	0.6584
PLAN	110	0.83	0.7525	0.8980
SAVE	74	0.81	0.7126	0.8980
Nicasalud	525	0.61	0.5677	0.6529

**Households Use a Latrine or Toilet as Reported by Women
(15-49yrs, Not Pregnant) by Region and in Nicasalud**

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.94	0.9080	0.9760
Esteli/Madriz	152	0.85	0.7911	0.9075
Jinotega	190	0.61	0.5440	0.6856
Nicasalud	532	0.76	0.7180	0.7927

**Children's Feces Are Disposed in Sanitary Mechanism as Reported by Women
(15-49yrs, Not Pregnant) by Region and in Nicasalud**

	n	MEAN	95% c.i.	
Chinandega/Leon	184	0.81	0.7514	0.8675
Esteli/Madriz	152	0.74	0.6710	0.8134
Jinotega	189	0.45	0.3732	0.5182
Nicasalud	525	0.61	0.5677	0.6529

**Households Are the Only Family Members Who Use the Latrine as Reported by
Women (15-49yrs, Not Pregnant) by Catchment Areas of 8 PVO's and in Nicasalud**

	n	MEAN	95% c.i.	
ADRA	36	0.97	0.9137	1.0277
CARE	93	0.98	0.9457	1.0083
CRS	20	0.94	0.8266	1.0486
HOPE	28	0.98	0.9284	1.0336
PARTNERS	27	0.97	0.8965	1.0371
PCI	41	0.98	0.9420	1.0239
PLAN	102	0.99	0.9726	1.0098
SAVE	69	0.94	0.8832	0.9979
Nicasalud	416	0.97	0.9497	0.9847

**Households Are the Only Family Members Who Use the Latrine as Reported by
Women (15-49yrs, Not Pregnant) by Region and in Nicasalud**

	n	MEAN	95% c.i.	
Chinandega/Leon	171	0.95	0.9181	0.9842
Esteli/Madriz	129	0.97	0.9464	1.0023
Jinotega	116	0.97	0.9432	1.0034
Nicasalud	416	0.97	0.9497	0.9847

Households of Women (15-49yrs, Not Pregnant) with Clean Latrines as Observed by Interviewer
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	36	0.86	0.7470	0.9794
CARE	89	0.88	0.8048	0.9457
CRS	19	0.47	0.2383	0.7090
HOPE	28	0.65	0.4665	0.8337
PARTNERS	26	0.55	0.3532	0.7510
PCI	42	0.92	0.8309	1.0032
PLAN	99	0.71	0.6183	0.8016
SAVE	72	0.70	0.5935	0.8106
Nicasalud	411	0.76	0.7131	0.7980

Households of Women (15-49yrs, Not Pregnant) with Clean Latrines as Observed by Interviewer
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.70	0.6336	0.7737
Esteli/Madriz	152	0.87	0.8096	0.9304
Jinotega	190	0.71	0.6252	0.7952
Nicasalud	411	0.76	0.7131	0.7980

Women (15-49yrs, Not Pregnant) Whose Households Have Soap
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.25	0.1083	0.3934
CARE	114	0.51	0.4158	0.6039
CRS	38	0.34	0.1857	0.4976
HOPE	57	0.44	0.3099	0.5754
PARTNERS	38	0.51	0.3480	0.6767
PCI	57	0.59	0.4605	0.7231
PLAN	114	0.60	0.5122	0.6962
SAVE	76	0.41	0.2916	0.5184
Nicasalud	532	0.45	0.4079	0.4943

Women (15-49yrs, Not Pregnant) Whose Households Have Soap
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.45	0.3739	0.5186
Esteli/Madriz	152	0.41	0.3291	0.4892
Jinotega	190	0.48	0.4030	0.5484
Nicasalud	532	0.45	0.4079	0.4943

Women (15-49yrs, Not Pregnant) Who Report Washing Their Hands
at the Following Times:
Note: Multiple Responses were allowed and Data not Weighted

	Frequency	Perecent
Before preparing a meal	309	58.08
Before eating	299	56.20
Before feeding the kids	131	24.62
Before Ffeeding the family	91	17.11
After defecating/urinating	403	75.75
After cleaning the baby When baby defecates	55	10.34
After disposing of the baby's feces	36	6.77
Other	74	13.91

Women (15-49yrs, Not Pregnant) Who Know 3 or More Times When Handwashing Is Appropriate
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.		*(3 or More Correct Answers)*
ADRA	38	0.28	0.1365	0.4333	
CARE	114	0.53	0.4340	0.6218	
CRS	38	0.39	0.2300	0.5508	
HOPE	57	0.39	0.2642	0.5254	
PARTNERS	38	0.48	0.3192	0.6479	
PCI	57	0.61	0.4832	0.7435	
PLAN	114	0.43	0.3324	0.5185	
SAVE	76	0.49	0.3779	0.6088	
Nicasalud	532	0.46	0.4181	0.5047	

Women (15-49yrs, Not Pregnant) Who Know 3 or More Times When Handwashing Is Appropriate
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.48	0.4066	0.5520
Esteli/Madriz	152	0.43	0.3527	0.5140
Jinotega	190	0.47	0.3950	0.5402
Nicasalud	532	0.46	0.4181	0.5047

Women's (15-49yrs, Not Pregnant) Households Dispose of Trash Either in a Closed Container, by Burning It, or via Truck
by Catchment Areas of 8 PVO's and in Nicasalud

	n	MEAN	95% c.i.	
ADRA	38	0.87	0.7552	0.9786
CARE	114	0.85	0.7859	0.9193
CRS	38	0.66	0.5058	0.8170
HOPE	57	0.65	0.5196	0.7750
PARTNERS	38	0.66	0.5046	0.8161
PCI	57	0.71	0.5872	0.8301
PLAN	114	0.92	0.8634	0.9679
SAVE	76	0.86	0.7744	0.9368
Nicasalud	532	0.77	0.7303	0.8037

Women's (15-49yrs, Not Pregnant) Households Dispose of Trash Either in a Closed Container, by Burning It, or via Truck
by Region and in Nicasalud

	n	MEAN	95% c.i.	
Chinandega/Leon	190	0.87	0.8188	0.9173
Esteli/Madriz	152	0.86	0.8013	0.9149
Jinotega	190	0.67	0.6011	0.7379
Nicasalud	532	0.77	0.7303	0.8037

Annex III: LQAS Methodology

A Brief History and Description of LQAS

LQAS was developed in the 1920s for quality control of industrial production of goods (Dodge and Romig 1944). The basic principle is that a line supervisor takes a small random sample of a recently-manufactured batch or lot of goods from a production unit, such as an assembly line or machine. If the number of defective goods in the sample exceeds a predetermined number, then the lot is rejected: otherwise it is accepted. This allowable number is called the *decision rule*. The number of allowable defective goods is determined statistically (Dodge and Romig 1944; Lwanga and Lemeshow 1991; Valadez 1991) based on a production standard and the sample size. The sample size is selected so that a manager has a high probability of accepting lots in which a predetermined proportion of the goods are of high-quality and a high probability of rejecting lots that fail to reach the production standard. In health systems, an example of a production standard is a predetermined coverage benchmark in a program area, such as vaccinations, knowledge of how to prepare and use ORS, deliveries performed by a medically-trained provider, or contraceptive method use. Standards (or benchmarks) can be set by health system managers at either a national or district level. In health systems, a *lot* is the catchment area of a health facility or of a health worker. It can also refer to a community. In this report a lot is a *supervision area*. The production unit is the set of health workers under one supervisor.

LQAS judgments about field areas have a percentage of error. In standard statistical nomenclature they correspond to alpha (α) and beta (β) errors. In epidemiological terms, these errors are related to the proportion of false positives and the false negatives in an assessment. The former can be used to calculate *specificity* ($1-\alpha$), the probability of correctly identifying supervision areas that reach performance benchmarks. The latter can be used to calculated *sensitivity* ($1-\beta$), the probability of correctly identifying supervision areas that cover an unacceptably low proportion of the population. The errors associated with LQAS sample sizes are presented elsewhere (Valadez 1998; Valadez and Leburg 2000) as is a discussion of LQAS principles. (Dodge and Romig 1944; Valadez 1986; Wolfe and Black 1989; Valadez 1991; Immunization 1996; Robertson, Anker et al. 1997).

Steps to Using LQAS

The steps to using LQAS do not differ drastically from collecting data with EPI cluster sampling (Henderson and Sundaresan 1982) and are enumerated below:

Each PVO organizes its program's catchment area into supervision areas (SAs). As already mention, a single SA is managed by a supervisor who could be a nurse, a nurse midwife, or someone else. Our experience indicates that this step aids PVOs to review and potentially enhance their management plan.

Each supervisor organizes his/her area into a sampling frame consisting of a list of communities and their population size within each SA.

A systematic random sample of the communities is used to identify the location of 19 households. This step is performed using a standard procedure described in many places

(CSSP 1997). Depending on the number of communities in an SA and the population size of each community, this procedure frequently results in no more than 1 randomly selected location per community. Table 4 includes a sampling frame for one of CARE's SAs included in the baseline. Of the 13 communities in the SA, 12 were selected as locations for one set of interviews in each. Two communities had two sets of interviews, and one had three. One community had zero interviews.

Table 25: Supervision Area #2 – MUNICIPALITY: SAN NICOLAS				
SA N°	Community	Population	Cumulative Population	Number of Households to Sample
1	Quebrada De Agua	218	218	1
2	Espinito	183	401	1
3	Rodeo Grande	296	697	1
4	Santa Clara	233	930	1
5	La Puerta	144	1074	1
6	Limones # 1	283	1357	1
7	La Sirena	246	1603	1
8	Salmeron (Moyes)	329	1932	2
9	La Tiejra	218	2150	1
10	Potrerillo	169	2319	1
11	La Granadia	120	2439	
12	Las Tablas	194	2633	1
13	Limay	301	2934	2
14	San Nicolas	652	3586	3
15	Guingajapa	244	3830	1
16	Jocomico	133	3963	1
Total In Area 2		3,963	Total	19
Sampling Interval =		208.58		
Random Number =		164		

Select a household within the communities identified. Although the *spin the bottle* or similar method is often used for 30 cluster samples, the Networks M&E Team recommended a different procedure for Nicaragua that it had previously field tested in Nepal (Valadez and Devkota in preparation). It consisted of either: (1) using existing hand drawn maps of the community prepared by the local health worker or (2) asking local informants to divide communities into neighborhoods of equivalent sizes and then selecting one of them randomly. A combination of these methods can be used. The half that is selected is then further subdivided into equivalent sections, with the help of an informant, and one is randomly selected. This procedure is continued until a small area remains in which the households can be easily counted. Then one of these houses is randomly selected. Both procedures worked well for supervisors to randomly select a household.

Once a household has been randomly selected, the supervisor determines whether a person with the appropriate characteristics lives in the house. If so and if they consent, they are then interviewed. If not, then the supervisor went to the household the front door of which was closest to the door of the house where the supervisor was standing. Additional discussion of selecting persons to interview can be found in the section of this report about *Parallel Sampling*.

Interpreting LQAS Data

LQAS data can be interpreted by using a decision rule to decide if the number of correct responses is below a threshold or by computing a coverage proportion (average coverage). The NicaSalud baseline report uses average coverage as described in the report section: *Using LQAS for Baseline Surveys*. In surveys where a threshold or benchmark has been established, an LQAS judgement is made using the following steps.

For each indicator, count the number of *correct* responses to the corresponding question. Go to the appropriate LQAS Table and locate the row for a sample of 19 (or the appropriate sample size if it is different than 19).
Find the program target along the column header and put your finger there.
Bring your finger down to the cell with a value in it. That is the *Decision Rule*.
If the total number of correct responses is less than the decision rule, then the area did not reach the target.

The composite table used for making these decisions by supervisors during tabulation workshops is included in Table 5 of the *Using LQAS for Baseline Surveys* subsection in the *Methods* section of the main text. This LQAS table is the most user friendly version developed to-date. A more sophisticated set of tables have also been developed and published separately (Valadez and Leburg 2000). However, a detailed Table for a sample size of 19 is included in Appendix 2 which displays the α and β errors associated with identifying supervision areas that meet annual benchmarks and those that do not. As this Appendix 2 shows α and β errors never reach 0.10. The corresponding specificity and sensitivity always exceed 90%.

Annex III: LQAS Tables of n=19 with Alpha and Beta Errors

SAMPLE SIZE= 19

Decision rule for an LQAS sample of **19** for average coverage/coverage target and lowest likely estimates ranging from 20-95% and 0-75%, respectively, with corresponding producer and consumer risks (α and β errors)

LOWER THRESHOLD	\ AVERAGE COVERAGE (Baselines) / ANNUAL COVERAGE TARGET (Monitoring and Evaluation)	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%
0%		1 0.014 0.000	2 0.031 0.000	3 0.046 0.000	3 0.017 0.000												
5%			3 0.111 0.067	3 0.046 0.067	4 0.059 0.013	4 0.023 0.013											
10%					4 0.059 0.115	5 0.070 0.035	5 0.028 0.035	6 0.032 0.009									
15%						5 0.070 0.144	6 0.078 0.054	6 0.032 0.054	7 0.034 0.016								
20%							7 0.173 0.068	7 0.084 0.068	7 0.034 0.068	8 0.035 0.023							
25%								8 0.180 0.077	8 0.087 0.077	8 0.035 0.077	9 0.035 0.029						
30%								8 0.180 0.182	9 0.184 0.084	9 0.088 0.084	9 0.035 0.084	10 0.033 0.033					
35%									9 0.184 0.185	10 0.186 0.087	10 0.087 0.087	10 0.033 0.087	11 0.029 0.035				
40%										10 0.186 0.186	11 0.185 0.088	11 0.084 0.088	12 0.077 0.035	12 0.023 0.035			
45%											11 0.185 0.184	11 0.084 0.184	12 0.077 0.087	13 0.068 0.034	13 0.016 0.034		
50%												12 0.182 0.180	12 0.077 0.180	13 0.068 0.084	14 0.054 0.032	14 0.009 0.032	
55%													13 0.175 0.173	14 0.163 0.078	14 0.054 0.078	15 0.035 0.028	16 0.013 0.008
60%														14 0.163 0.163	15 0.144 0.070	15 0.035 0.070	16 0.013 0.023
65%															15 0.144 0.150	16 0.115 0.059	16 0.013 0.059
70%																16 0.115 0.133	17 0.067 0.046
75%																	17 0.067 0.111

REFERENCES

CSSP, C. S. S. P. (1997). Survey Trainer's Guide for PVO Child Survival Project Rapid Knowledge, Practice and Coverage Surveys. Baltimore, Johns Hopkins School of Hygiene and Public Health.

CSTS and CORE (1999). KPC-2000: Knowledge, Practices and Coverage Survey. Calverton, MD, Child Survival Technical Support Project and the CORE Monitoring and Evaluation Working Group.

Dodge, H. F. and H. G. Romig (1944). Sampling Inspection Tables: Single and Double Sampling. New York, John Wiley & Sons.

Henderson, R. H. and T. Sundaresan (1982). "Cluster sampling to assess immunization coverage: A review of experience with a simplified sampling method." Bulletin of the World Health Organization **60**: 253-260.

Immunization, G. P. f. V. a. (1996). Monitoring Immunization Programmes Using the Lot Quality Technique. Geneva, World Health Organization.

INEC, I. N. d. E. y. C., M. d. Salud, et al. (1999). Encuesta Nicaraguense de Demografía y Salud 1998. Managua, Instituto Nacional de Estadísticas y Censos

Ministerio de Salud

Macro International Inc.**:** 319.

Lwanga, S. K. and S. Lemeshow (1991). Sample Size Determination in Health Studies: A Practical Manual. Geneva, World Health Organization.

Robertson, S. E., M. Anker, et al. (1997). "The lot quality technique: a global review of applications in the assessment of health services and diseases surveillance." World Health Statistical Quarterly **50**: 199-209.

Valadez, J. J. (1986). Lot Quality Acceptance Sampling for Monitoring Primary Health Care Coverage. Washington, D.C., Pan American Health Organization (WHO).

Valadez, J. J. (1991). Assessing Child Survival Programs in Developing Countries: Testing Lot Quality Assurance Sampling. Cambridge, Harvard University Press.

Valadez, J. J. (1998). A Manual for Training Supervisors of Community Health Workers to Use LQAS: A User's Guide. Arlington, OMIN Research.

Valadez, J. J. (2000). NGO Networks for Health Detailed Monitoring and Evaluation Plan. Washington DC, NGO Networks for Health**:** 64.

Valadez, J. J. and B. R. Devkota (in preparation). Using LQAS for Regular Monitoring in a Decentralized Integrated Health Program in Two Districts of the Terai, Nepal. Draft 7**:** 26.

Valadez, J. J. and C. Leburg (2000). LQAS Tables of Sample Sizes, Decision Rules and Errors: A Program Manager's Version and a Local Supervisor's Version. Washington DC, NGO Networks for Health.

Wolfe, M. C. and R. E. Black (1989). Manual for Conducting Lot Quality Assessments in Oral Rehydration Therapy Clinics. Baltimore, Johns Hopkins University School of Hygiene and Public Health.